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Experiences of Agricultural Education Preservice Teachers Engaging in Critical Friendships

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Agricultural and Extension Education

by

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University of Arkansas
Bachelor of Science in Agricultural, Food and Life Sciences, 2013

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This thesis is approved for recommendation to the Graduate Council.

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Abstract

Like educators in other disciplines, agricultural education preservice teachers must find ways to improve as teachers using methods such as reflection or peer observation. Critical friendship combines both, promoting reflection through the use of a critical friend who observes an individual's teaching and provides constructive criticism to help the individual advance their practice. This qualitative study sought to use the critical friendship concept to assist agricultural education preservice teachers in reflecting on their teaching techniques.

Participants were randomly assigned to one of two groups; one group selected a critical friend in agricultural education, and the other group selected a critical friend in an educational discipline outside of agricultural education. Participants were asked to have a conversation with their critical friend each week, and reflect on the conversation in their journals. Audio from conversations from week four through week six of the study were recorded. The participants were also required to arrange for their critical friend to come observe them teaching a lesson plan prepared by the researchers and then reflect on the experience together. At the end of the student teaching internship, participants were asked to engage in one-on-one interviews with the researcher about their experiences in a critical friendship. The audio recorded conversations and interviews were transcribed and coded for themes.

Different themes emerged from the conversations between two agricultural education preservice teachers and between an agricultural education preservice teacher and a teacher in a different educational discipline. The two agricultural education preservice teachers discussed teaching concerns and sought feedback from each other about potential solutions. The agricultural education preservice teacher and the non-agricultural education critical friend used

the conversations to establish common ground as teachers. The same themes emerged from the interviews regardless of the type of critical friend. Participants found critical friendships to be beneficial, but cautioned that there were certain characteristics that allowed their critical friendships to develop.

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Special thanks are extended to my committee members, Cassandra Cox, Dr. Don Johnson, and Dr. Harold Goodwin, for working with me and providing valuable feedback from the perspective of outsiders.

To the lunch crew: we'll always have Marlo's Taco Shack.

Dedication

This thesis is dedicated to my grandmother, Geneva Sellick, who passed away in January 2016. She lived in the Ozarks for all of her 97 years. One of the original aims of the Smith-Hughes Act was to help keep students like my grandmother in the school system after the eighth grade, but unfortunately she did not get the chance to reap such benefits. Grandma went on to milk cows, survive a tornado, raise four kids, work a few decades at the chicken plant, and grow a huge garden every year. I was very blessed to have been able to spend so much time with her. Grandma's life-long dedication to farming was a major influence in my decision to enter the field, literally and metaphorically.

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I. Introduction

In their quest to discover what makes an effective teacher, Cruickshank and Haefele (2001) found that the answer was not simple. Many different qualifiers are used when labeling a teacher as “effective”, and no single indicator of effectiveness is present in every effective teacher. Cruickshank and Haefele (2001) posited that, among many other qualifiers, effective teachers possess a “strong, sustained interest in learning about the art and science of teaching and about themselves as teachers” (p. 28). Donald Schön (1983) expressed similar beliefs, suggesting that “learning comes from becoming aware of one’s own inconsistencies” (p. 111). In his *Experiential Learning* publication, David Kolb (1984) declared “knowledge is a transformation process, being continuously created and recreated” (p. 38). Cruickshank and Applegate (1981) claimed that educators—the facilitators of knowledge—who continually sought to improve themselves were key to improving the state of education as a whole. Specific to agricultural education, the American Association for Agricultural Education (Doerfert, 2011) stated that educators with “adaptive expertise” (p. 22) were the ones best suited to teach today’s students.

Educators can facilitate their own learning through various methods, one of which is the practice of reflection. John Dewey (1933) defined reflective thought as the process of examining the basis of one’s beliefs and declared the reflective process to be the most effective method of improving one’s self. Schön (1983) championed reflection as an antidote to the rote, routine actions of professionals such as doctors and educators. However, as self-examination often excludes outside viewpoints (Valli, 1997), the reflector may have difficulty evaluating the effectiveness of his or her actions (Webb, 2000). Another avenue of educator development involves a trusted individual, or “critical friend,” who provides supportive feedback and, as Costa and Kallick (1993) described it, “nudg[es] the learner to see the project from different

perspectives” (p. 50). The critical friend facilitates reflection by helping the educator visualize a situation from a different view (Swaffield, 2007). Methods and types of self-reflection used in agricultural education teacher training have been examined in several studies (Broyles, Epler, & Waknine, 2011; Bruce & Ewing, 2012; Epler, Drape, Broyles, & Rudd, 2013; Greiman & Covington, 2007; Lambert, Sorenson, & Elliot, 2014), exploring topics ranging from the transfer of specific teaching skills and using reflection to understand the student teaching experience to determining differences in depth and content of reflection based on different methods of reflection and discovering student teachers’ preferred methods of reflection. However, the use of critical friendships has not yet been examined in the context of agricultural education teacher preparation. The proven benefits of critical friendships in other educational contexts (Baskerville & Goldblatt, 2009; Farrell, 1998; Golby & Appleby, 1995; Petrarca & Bullock, 2014; Schuck & Russell, 2005) suggests potential for improving the reflective experiences of agricultural education preservice teachers.

A. Background to the Study

Shoulders and Myers (2011) posited agricultural education teachers possess a unique professional identity that distinguishes them from educators in other subjects. However, agricultural education teachers, like teachers in other disciplines, must practice evidence-based pedagogical methods and strive to improve their practice. Reflection, the self-examination of one’s beliefs and actions with the intent of change, is one of the many methods of teacher improvement agricultural educators can incorporate into their daily practice. John Dewey (1933) believed people cultivate some of their beliefs without reason or evidence, and normal pathways of thinking do not attempt to justify, prove, or disprove these beliefs. Reflective thought, which requires continuous mindful analysis of one’s beliefs or knowledge, was proposed as a

productive alternative to the common, random thoughts we have throughout life, as the reflective method of thought is based in evidence (Dewey, 1933). To initiate the process of reflective thought, we must first encounter something that challenges our thought or belief, and then search for factual information that will prove or disprove the challenge to our thought or belief; Dewey posited that if teachers fail to continually challenge their own beliefs, they risk passing this attitude on to their pupils (Dewey, 1933). Schön (1983) blamed the loss of the public's faith in professionals, such as educators, on the lack of regular examination of professional beliefs. Both Dewey and Schön favored the general approach of reflective action. In more recent years, Broyles et al. (2011) found career and technical education students, including those in agricultural education, were able to recognize methods to change their teaching behaviors and strategies through the use of reflection techniques. Epler et al. (2013) further confirmed the value of reflection among agricultural education teacher candidates.

There are numerous methods of reflection utilized by preservice teachers. Greiman and Covington (2007) discovered agricultural education preservice teachers preferred to reflect using verbal means rather than journaling, although they still viewed the experience of reflecting via journaling as a positive one. Epler et al. (2013) found the reflection process assisted students in identifying aspects of their teaching methods that needed improvement, and in determining ways to implement those changes. Peers can also participate in the reflection process, bringing outside viewpoints into the examination of one's teaching techniques. Shortland's (2010) use of the peer observation process resulted in an improved "critical friendship" (p. 300) between participants, which allowed for deeper discussion of teaching issues without the stigmas of evaluation or judgment. Reflection through a critical friend allows participants to examine an experience through different viewpoints and make provisions for improvement (Costa & Kallick, 1993).

Terry and Briers (2010) encouraged agriculture teachers to develop relationships with both their agricultural education peers and with non-agricultural education colleagues in their schools. While Shoulders and Myers (2011) postulated that agriculture teachers have a different professional identity in comparison to educators in other subject areas, Fritz and Miller (2003) found that agricultural education preservice teachers had the same teaching concerns as preservice teachers in other educational disciplines. Handal (1999) noted that critical friends in different educational fields “are more likely to ask each other authentic and essential questions, such as, ‘Why do you do things this way?’” (p. 67).

B. Statement of the Problem

Little is known about the experiences agricultural education preservice teachers might encounter while participating in critical friendships with peers within their discipline and within other educational disciplines. There is a gap in the literature pertaining to the experiences of preservice teachers in critical friendships. To date, most studies have examined critical friendships between teacher educators, researchers, and other university-level faculty. Lambert et al. (2014) called for further research on utilizing different teacher reflection methodologies, such as critical friendship, in authentic settings similar to those found during the student teaching internship. Greiman and Covington (2007) suggested preservice teachers be given more time to meet and verbally reflect with peers, the basic function of a critical friendship (Costa & Kallick, 1993), during the course of the student teaching period. Franzak (2002) proposed further examination of critical friendships within the context of helping preservice teachers explore the role of being a teacher, and Baskerville and Goldblatt (2009) suggested that further studies should look at whether the development of a critical friendship would arise from self-selection of a critical friend. Shoulders and Myers (2011) explained that agricultural teacher preparation

programs tend to reside in colleges of agriculture while other teacher preparation programs are included in colleges of education, a possible contributing factor to the development of a different professional identity as teachers among agricultural educators. While agriculture teachers may perceive their professional identity as markedly different from that of teachers in other subjects, they still have to work alongside teachers in other disciplines in their schools. Participation in critical friendships may allow agriculture teachers to form bonds over shared struggles and problems with peers in their discipline and in other disciplines.

C. Purpose of the Study

The purpose of this study was to understand the experiences of agricultural education preservice teachers participating in critical friendships with other agricultural education majors and with educational majors in other disciplines.

D. Significance of the Study

The American Association for Agricultural Education (Doerfert, 2011) lists the examination of “reflection in developing meaningful, engaged learning experiences across all agricultural education contexts” (p. 9) as one of its research priority areas for 2011-2015. Critical friendships, established among peers, are useful in developing trust among preservice teacher peers and fostering the exchange of valuable critiques (Franzak, 2002). We sought to use this study as a means to continue to improve the agricultural education teacher training program at the University of Arkansas to meet the need for creating excellent teachers of agriculture capable of continuous improvement through quality reflective experiences.

E. Research Questions

The purpose of the study was to expand understanding of agricultural education preservice teachers' experiences when engaging in critical friendships. Because there exists a gap in the literature regarding preservice agricultural educators' experiences in critical friendships, a qualitative research design was deemed to be most fruitful in reaching this purpose. The following research questions guided the study:

- 1) What are the experiences of agricultural education preservice teachers in critical friendships with other agricultural education majors?
- 2) What are the experiences of agricultural education preservice teachers in critical friendships with education majors in disciplines outside of agricultural education?

F. Overview of Methodology

This study employed a qualitative research design (McMillan and Schumacher, 2009). The target population consisted of preservice agricultural education teachers enrolled at the University of Arkansas. From that target population, a complete sample (Flick, 2006) of all agricultural education preservice teachers participating in a student teaching internship in the spring 2016 semester was used. Following a thorough briefing on the subject of critical friendships, participants were randomly assigned to one of two groups: participants in group X were instructed to select a critical friend in the agricultural education discipline, and participants in group Y were instructed to select a critical friend in an education discipline outside of agricultural education. All participants were required to have weekly conversations with their critical friend and complete a weekly journal entry about the conversation for the duration of the student teaching experience. The participants recorded the audio from their conversations from

weeks four through six; audio from conversations from the first three weeks were not recorded so that participants could have some time to become comfortable talking with their critical friend. In addition, participants were required to participate in a peer observation exercise with their critical friend during the three-week data collection period. To control variability within the peer observation process, a 30-minute lesson plan persuading high school students to participate in higher education was developed. Following the completion of the lesson, participants completed a written journal entry and then discussed the reflections with their critical friend. At the end of the student teaching experience, focused interviews were conducted with participants on a one-on-one basis using an interview guide adapted from Dahlgren et al. (2006). The audio from the interviews and recorded conversations between critical friends were transcribed and coded for themes using the constant comparative method (Glaser, 1965).

G. Limitations and Assumptions

Because of the nature of the agricultural education teacher training program at the institution investigated in this study, the findings are limited to the population of agricultural education preservice teachers at the University of Arkansas. As such, the participants formed a cohort, and their previous interactions with one another and the researcher may have influenced their development of critical friendships. The literature on critical friendships indicated that regardless of age or years of experience, participants may not be accustomed to dealing with or simply unable to deal with criticism, no matter how supportive or friendly, and will be non-receptive to or defensive about any suggestions for improvement made by the critical friend (Farrell, 1998). It was assumed that participants had some previous experience with receiving constructive criticism from peers, as they had each engaged in peer-to-peer evaluation during microteaching activities in their education classes. Time was a limiting factor in the development

of critical friendships among the participants, as the data collection period was relatively brief in an effort to reduce the burden and prevent attrition of participants.

H. Key Terms

Agricultural Education—as defined by the National FFA Organization (2015), agricultural education is “a systematic program of instruction available to students desiring to learn about the science, business, technology of plant and animal production and/or about the environmental and natural resources systems” (para. 3).

Critical friend—this study uses the definition provided by Costa and Kallick (1993), which states that a critical friend is a person trusted to critique another’s work supportively, aimed at improving the work of the critiqued individual.

Peer Observation—the process of preservice teachers delivering identical lesson plans to peers and then reflecting collaboratively with those peers (Cruickshank, 1981).

Preservice teacher—an undergraduate agricultural education student who is a candidate for teacher certification but has not yet completed a student teaching experience in a cooperating school.

Reflection—the continual evaluation of the basis of one’s beliefs and knowledge (Dewey, 1933).

Student teaching—field experience in utilizing theory and technique while teaching in a secondary school, completed by a preservice teacher as a requirement for a degree or certification.

Teaching block—as used at the participating institution, an intensive two-week period preceding the student teaching experience focused on preparing the preservice teacher for the upcoming experience.

I. Summary

The agricultural education profession is in need of highly qualified and reflective educators to meet the extensive demand for teachers in the subject area (Doerfert, 2011). Critical friendships are an under-studied method of facilitating reflection in agricultural education preservice teachers. This study sought to examine the experiences of preservice agricultural education teachers participating in a critical friend dyad during the student teaching experience. Through a qualitative approach, conversations between critical friends and focused interviews with participants were analyzed. Chapter 2 includes an examination of the literature pertaining to agricultural education teacher training, reflection, peer observation, and critical friendships, and establishes the theoretical and conceptual frameworks that guided our research. Chapter 3 details the methodology of the study, including selection of participants, instrumentation, qualitative rigor, data collection, and data analysis. Chapter 4 presents the findings through the major and sub-themes that emerged from the data. Finally, Chapter 5 connects those findings to the literature and the theoretical frameworks, discusses implications, and recommends pathways for future research.

II. Literature Review

Introduction

The purpose of this study was to further understand the experiences of agricultural education preservice teachers in critical friendships. To successfully foster critical friendships between our participants, an in-depth examination of agricultural education teacher training, reflection, peer observation, and critical friendships was needed. This chapter details the components of teacher preparation in agricultural education, the definition of reflection and the basic components needed to facilitate the practice, the evolution of reflective thought from Dewey's first postulations to its incorporation in teacher education and preparation, and how peer observation is combined with reflection to create critical friendships. Additionally, the conceptual and theoretical frameworks guiding this study are explained.

A. Agricultural Education Teacher Training

History of agricultural education. Agricultural education was born of a need to train students for the agricultural and mechanical arts (Herren & Hillison, 1996), though it could be said that it has outgrown its original mission as the profession has expanded to accommodate subjects dealing with everything from animal science to biotechnology (Shoulders & Myers, 2011). Derived from Jonathan Baldwin Turner's vision of industrial universities for the working class, the Morrill Act was signed into law in 1862, granting tracts of land in the Western territory to states to sell. The states were required to use the profits to establish state colleges and universities focused on teaching courses in mechanical arts and agriculture (Herren & Hillison, 1996). As agricultural education increased in popularity in secondary schools during the first few decades of the 20th century, an acute need developed for the training of teachers of agriculture

(Herren & Hillison, 1996). The 1907 Nelson Amendment provided some of the first federal monetary support for training agricultural educators (Stimson & Lathrop, 1954), and the 1917 Smith-Hughes Act provided further funding for training and support (Smith-Hughes, 1917). In its early years, the focus of agricultural, or vocational, as it was known then, education was split between two philosophies: the social efficiency view, which saw students more as workers than learners and sought to tailor education to the students' supposed predetermined roles in society (Camp, 1982); and the belief championed by John Dewey that students should be trained to be lifelong learners, with the emphasis of education based on the overall development of the student (Wardlow & Osborne, 2010). Social efficiency guided agricultural education through legislation, but the profession has embraced Dewey's vision of well-rounded learners who continue to acquire knowledge once they have left the classroom. In order to raise these lifelong learners, agricultural education needed teachers who embodied the same principles (Doerfert, 2011).

Common course requirements for agricultural education majors. Although specific requirements vary by state and institution, there are some commonalities in the present-day agricultural education teacher training process. Students in an agricultural education teacher training program typically enroll in a mix of technical content courses relating to agriculture, general education, and professional and pedagogical courses (Barrick & Garton, 2010; McLean & Camp, 2000; Swortzel, 1999). Preservice teachers also participate in early field-based experiences (EFEs) to “link theory with practice” (Miller & Wilson, 2010, p. 133). The course of study of an agricultural education major typically culminates in a student teaching experience in a cooperating middle or high school agricultural education program (Miller & Wilson, 2010; Swortzel, 1999). Before they begin their student teaching experience, the preservice teachers may be required to participate in a teaching block, an intensive set of courses designed to

“immers[e] the student in the discipline, allow[ing] for greater depth of study” (Roberts & Kitchel, 2010, p. 108).

Differences between agriculture teachers and teachers in other disciplines. Shoulders and Myers (2011) suggested that agriculture teachers have a unique professional identity which differs from the professional identity of educators in other subject areas. Agriculture teachers may be drawn to teaching more for the subject matter than for the opportunity to work with students, although they do eventually build close relationships with students (Shoulders & Myers, 2011). Differences in teacher identity may also form due to the placement of agriculture teacher preparation programs in colleges of agriculture as opposed to colleges of education. Identity does not appear to affect basic teaching concerns however as agricultural education preservice teachers were found to share the same concerns as preservice teachers in other subjects about “classroom instruction and management, student discipline, and time management” (Fritz & Miller, 2003, p. 52).

B. Material for Reflection

The agricultural education teacher candidate, like a teacher candidate in any other academic subject, may practice reflection in order to improve her or his practice, and thus must determine what constitutes material for reflection. Argyris and Schön (1974) believed the answer lay in the incongruities between a professional’s reasoning behind an action and the actual action undertaken. They argued for the existence of two theories which explained “a person’s deliberate behavior” (Argyris & Schön, 1974, p. 6): the theory of action and the theory-in-use. A person’s theory of action is what that person would claim to do in a particular situation, and is informed by implicit or tacit knowledge, that is, the knowledge we have access to and utilize but do not

consciously recognize why we know it or use it. The theory-in-use is what actually governs the person's actions and is constructed using observations of the person's behaviors. Argyris and Schön (1974) described the theory-in-use as "making explicit what we already know tacitly" (p. 11), as we actively utilize our instinctive knowledge. It is the discovery of the conflict between a person's theory of action and theory-in-use which informs the practitioner that changes must be made to her or his theory-in-use. However, we may be resistant to change of this nature "because we wish to keep our theories-in-use constant" (Argyris & Schön, 1974, p. 17) and because "change implies unsteadiness or flightiness that would themselves be a basis for failure" (p. 28). We see evidence of the conflict between theories of action and theories-in-use in numerous studies examining reflection as the practitioner participants look at what they did, as evidenced by video recordings, the observations of others, or their own memory, and compare those actions to what they wanted to do (Epler et al., 2013; Greiman & Covington, 2007; Lambert et al., 2014; Petrarca & Bullock, 2014). Using evidence of personal practice, the preservice teacher sees a conflict between intention and action. Now the teacher has material to engage in reflective thought.

C. Reflective Thought

There are several versions of the definition of reflective thought. Reflective thought, as John Dewey (1933) stated, was a more logic-oriented, controlled approach to thinking, one that allowed a person to develop internal signals to remind oneself of the consequences of a certain path of action and to make preparations to accept or avoid these consequences. Dewey (1933) said the practice of reflective thought allows the learner to "come into command of what is now distant and lacking" (p. 17), and infuse intelligence into their actions. Belief in evidence—or lack thereof—was an essential aspect of reflective thought, as the presence or absence of an

influencing factor steered thought in one direction or the other (Dewey, 1933). Whereas Dewey's reflective thought seemed to take place after action and consequences, Schön (1983) proposed a more active type of reflection: reflection-in-action. His theory of reflection-in-action manifested itself in the learner thinking about the reasons behind his or her actions during the very moments these actions are carried out (Schön, 1983). Reflection-in-action, Schön (1983) suggested, was often born of a surprise or an unexpected result; as we experience the unexpected, we begin to reflect simultaneously on "the outcomes of action, the action itself, and the intuitive knowing implicit in the action" (p. 56). In terms of Schön's previously mentioned theories, reflection-in-action occurs as we witness disagreement between our theory of action, or what we think we are doing, and our theory-in-use, or what we actually do, all while we are actively using our theory-in-use (Argyris & Schön, 1974). McAlpine, Weston, Beauchamp, Wiseman, and Beauchamp (1999) observed reflection-in-action being utilized by instructors in every class observed for their study. Their observations of practitioners of reflection-in-action found that such educators were receptive to in-the-moment cues from students and then reflected on those cues to modify their immediate teaching actions. This receptivity to student cues, as discovered by McAlpine et al. (1999), was suggested to be one of the methods instructors use to gauge whether learning goals are being met by the current instructional methods used. Reflection is useful both in the moment, to mold instruction to the students' reception of the material (Schön, 1983), and after the event, to determine plans of action for future instruction (Dewey, 1933).

D. Reflection for Preservice Teachers

Reflection has been recommended as an essential component of teacher education by numerous researchers investigating the subject (Epler et al., 2013; Schön, 1983; Valli, 1997; Yost, Sentner, & Forlenza-Bailey, 2000). Most of the existing literature regarding preservice

teachers and reflection examined the medium of reflection used and how that choice affected the depth of reflection. Agricultural education preservice teachers preferred oral reflection over written reflection, and provided more depth when speaking about their experiences (Greiman & Covington, 2007). These results were seemingly contradicted in a later study by Epler et al. (2013), which found that career and technical education preservice teachers displayed deeper reflective thinking on written forms as opposed to collaborative or think-aloud reflection methods. The participants in that study described the usage of collaborative and think-aloud reflection techniques as more “distracting and awkward” (Epler et al., 2013, p. 56) than written reflection prompts. Regardless of method, however, participants found the overall reflective process to be helpful in recognizing ways in which they could improve their teaching (Epler et al., 2013). Lambert et al. (2014) found little overlap in the sequences and content of thoughts covered by oral reflection, such as reflective interviews with a researcher, and written reflection, such as journals and prompts, with preservice teachers generating more supporting statements when reflecting orally and more summative statements when reflecting through the written word. Farr and Riordan (2015) found that in an online setting, preservice teachers preferred using private blogs to reflect over chat rooms or discussion forums. Greiman and Covington (2007) found time was a major barrier to preservice teachers engaging in journal-based reflection. However, continuing to practice reflection in any form was found to increase the participant’s depth of reflection over time (Farr & Riordan, 2015; Lee, 2005). Broyles et al. (2011) concluded reflection in general contributed “to changes and improvement in teaching behaviors for preservice teachers” (p. 62). The basic form of reflection is very introspective, as the reflector reflects on his own actions. This can lead to bias and failure of the preservice teacher to recognize what parts of her or his practice need to be improved (Valli, 1997; Webb, 2000). Many

preservice teachers now participate in a related group of practices involving the observation of peers delivering lessons and reflecting on the experience in pairs or larger groups.

E. Peer Observation

To make the process of reflection more public and less vulnerable to personal bias, peers can be brought into the process (Webb, 2000). To practice peer observation, a practitioner observes a peer teach, and then afterward participates in a collaborative reflection session with the peer (Cosh, 1998; Cosh, 1999; Kohut, Burnap, & Yon, 2007). As explained by Cosh (1999), peer observation is conducted to “encourage self-reflection and self-awareness about our own teaching” (p. 25). To successfully implement this concept, the teachers collectively decide how often observations should be conducted, what peers they will observe, the focus of the observation, and forms of feedback, whether written, verbal, or video, that focus on what the observer has learned from the observed (Cosh, 1999). As peers observe each other, they familiarize themselves with the teaching styles and situational context, enhancing their ability to provide meaningful feedback and thus reflect on their own methods. Numerous researchers have noted the prevailing idea that being observed and providing feedback to peers can be a stressful and controversial subject (Achinstein & Meyer, 1997; Cosh, 1999; Shortland, 2010). Yiend, Weller, and Kinchin (2014) found participants in a peer observation process who “fail[ed] to understand the purpose of the exercise or are inherently resistant to change” (p. 476) only provided positive comments and did not contribute critical reflection suggestions, the latter being the goal of peer observation (Carroll & O’Loughlin, 2014). However, Kohut, Burnap, and Yon’s (2007) study on peer observation yielded the statement, “observers and observees noted that conducting or participating in peer observation was not very stressful, and both groups noted that their own teaching improved as a result of their participation in the process” (p. 24). In a study of

staff at a research university in Australia participating in a peer observation activity, Hendry, Bell, and Thomson (2014) discovered a majority of respondents learned about a new teaching strategy during their observation, and later tested the technique in their own teaching. Shortland (2010) found peer observation helped a colleague gain awareness of teaching issues and collaboratively develop solutions to correct these issues, with both parties reporting a “sense of deepened collegiality” (p. 300) and strengthened respect for one another.

F. Critical Friendship

Critical friendship is both an extension and an essential part of peer observation, as it involves peers observing one another and reflecting together in person, over the phone, or through written correspondence. Achinstein and Meyer (1997) defined it as a process that engaged peers “in critical reflection in the climate of friendship” (p. 4). Critical friendships emphasize trust between participants (Farrell, 1998; Handal, 1999), which allows for a clearer and more honest discussion of the teaching process utilized by a “friend” (Costa & Kallick, 1993; Franzak, 2002). Critical friendships are based on the exchange of constructive criticism, meant to be supportive of the person being criticized, to advance the development of the involved parties as educators and encourage them to carefully examine their methods and the beliefs that underlie those methods (Özek, Edgren, & Jandér, 2012). A critical friend assists by “‘hold(ing) up a mirror to another person in terms of their practice or ideas so that they can examine them critically’” (Swaffield, 2007, p. 209). Most critical friendships have been found to be positive experiences which allowed the participants to develop trust in each other and improve educational practice (Baskerville & Goldblatt, 2009; Farrell, 2001; Flessner & Horwitz, 2012; Manouchehri, 2002; Peel & Shortland, 2004). Swaffield (2008) agreed that trust was essential to the success of a critical friendship, and added that dialogue, or “the exchange of ideas and the

search for shared meaning and common understanding” (p. 328), was an additional core feature of critical friendship. Petrarca and Bullock (2014) came to a similar conclusion, stating that participating in a critical friendship helped them find “support and reassurance” (p. 277) in each other as they realized that they were struggling with similar problems. However, Golby and Appleby (1995) cautioned that differences in the levels of experience between participants may inhibit the formation of a truly equal partnership. Schuck and Russell (2005) suggested that entering into a critical friendship with an individual who is already a friend may make the process easier at first, but did not guarantee that the partnership will be successful over time. Although critical friendships among experienced educators typically developed from a need for informal feedback on teaching effectiveness (Farrell, 2001; Schuck & Russell, 2005; Petrarca & Bullock, 2014), critical friendships among preservice teachers tended to form only if it was required as a part of the teacher preparation program (Franzak, 2002) or if they were participating in a research study (Manouchehri, 2002). Especially important was the stipulation that participants in critical friendships be given the choice to pick their critical friend (Carroll and O’Loughlin, 2014), as Farrell (1998) postulated that choice of a “partner who is already known and familiar” (p. 85) could shorten the time needed to develop trust in the relationship.

The literature suggests critical friendships could be a promising method to encourage reflection in early practitioners. Terry and Briers (2010) encouraged agriculture teachers to build relationships with colleagues in their schools and with peers in the agricultural education profession both state- and nation-wide. Fritz and Miller (2003) found that agricultural education preservice teachers who were required to communicate with peers during the student teaching experience gave advice to and shared lesson plans or ideas with peers. Critical friendships appear

well-suited to these purposes; however, the practice of critical friendship has not been studied within the discipline of agricultural education.

G. Theoretical Framework

Carver and Scheier's (1982) control theory, Ajzen's (1991) theory of planned behavior, and Kolb's (1984) experiential learning theory guided this study.

Carver and Scheier's (1982) Control Theory

Carver and Scheier (1982) suggested that control theory, normally used in understanding self-regulation systems, could be used to model "human functioning" (p. 111). The theory is built on the negative feedback loop, which is used by a person to reduce, or "negate," perceived variations from a standard. The negative feedback loop consists of four main components: input function, comparator, output function, and impact on environment (Carver & Scheier, 1982). Figure 1 displays a model of this particular negative feedback loop.

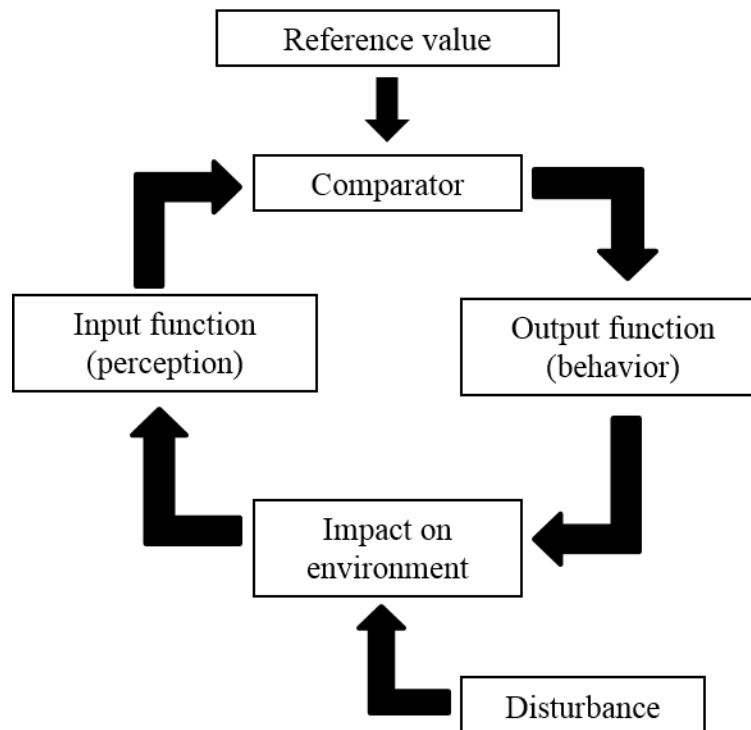


Figure 1. The control theory model. Adapted from “Control Theory: A Useful Conceptual Framework for Personality-Social, Clinical, and Healthy Psychology,” by C. Carver and M. Scheier, 1982, *Psychological Bulletin*, 92, p. 112.

The loop begins with an input function, or a perception of a current circumstance, which is then compared to a reference value using a mechanism known as a comparator. Reference values come from higher order goals—for example, the teacher’s higher order goal may be to become more like a peer whom they see as using more effective teaching techniques. That goal then creates a reference value for comparison, which could be any number of qualities displayed by their peer. If the comparison of the input function and the reference value reveals a disagreement, an output function, or behavior, is then carried out with the aim of minimizing the difference between the two. The output function will have an impact on the environment of the system, facilitating a change in environmental conditions and creating new input functions for comparison. Disturbances can also influence the external environment of the feedback loop.

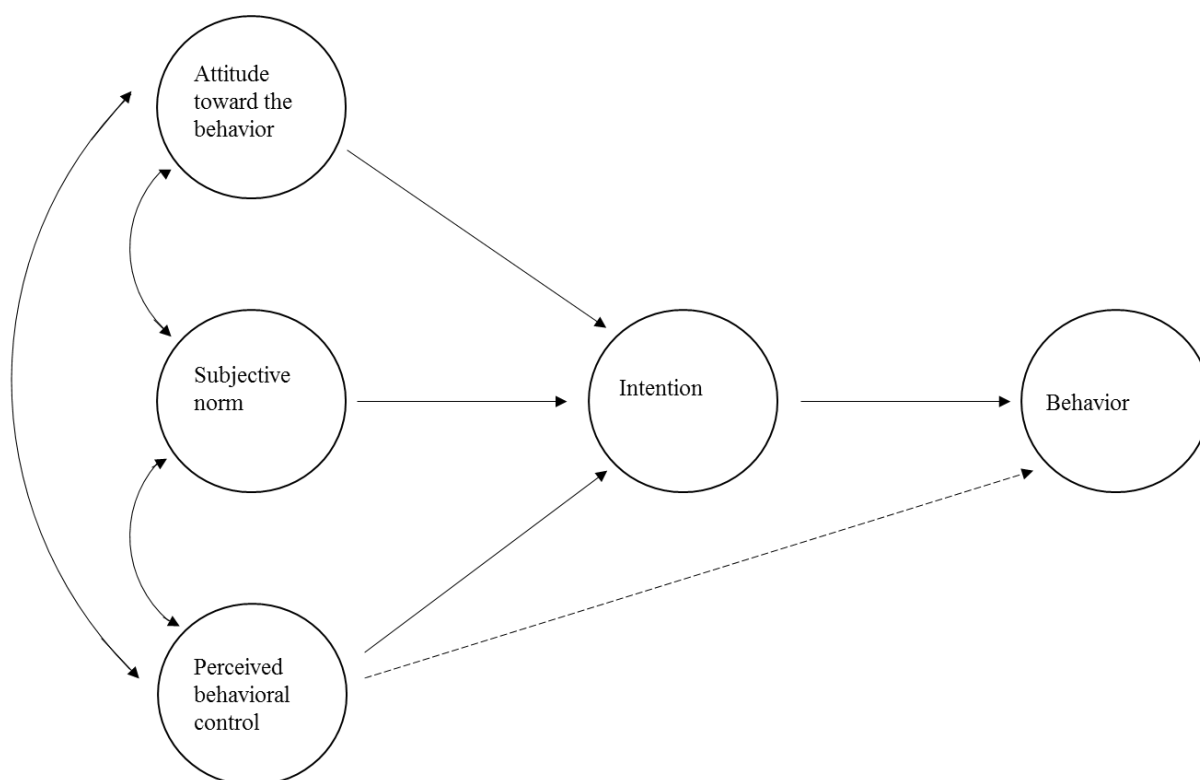
Preservice teachers may utilize a negative feedback loop to monitor their performance in the classroom. A teacher may sense, or receive an input function, that the current teaching technique in use is not working due to the number of students talking about other subjects instead of working on an assignment. The teacher compares this perception to a reference value, or comparator, which in this case would be the understanding that effective teaching would lead to all students engaging in on-task discussion. Finding a discrepancy between the input function and the comparator, the teacher enacts a behavior, or output function, to try to align his or her perception with the standard. The teacher may decide to walk around the classroom and monitor students as they work. This behavior impacts the environment, changing the perceptions that the teacher now senses; because the teacher is closer to the students, they may decrease conversations about off-topic subjects and focus more on the assignment.

Control theory was implemented in this study through the use of a critical friend to provide reference values to the participant. Both participants in a critical friend dyad may be enacting a negative feedback loop to solve a particular problem in their classroom. In reference to the example made previously, where did the teacher obtain the reference value of what on-task discussion sounds like? If the teacher was in a critical friendship, it is possible that the teacher's critical friend described in detail a situation where students were engaging in on-task discussion and thus the teacher adopts this ideal as a reference value to which the current classroom environment is compared. Depending on the magnitude of disagreement between perception and ideal, the individual can have one of three reactions to the feedback received: quit, making no additional effort to change; justify the disagreement as unwarranted and make no change; or accept the disagreement and attempt to change the present conditions to match the ideal. In the case of quitting or justifying feedback as unwarranted, behaviors may be enacted, but not to

change the environment as the individual perceives the environment to be either too difficult to change or not in need of change. It is only in the case of acceptance of feedback that the teacher enacts behaviors intended to reduce the disagreement between perception and ideal. The environment changes, and the cycle starts over again as the teacher perceives the new condition. By introducing a critical friend into the feedback loop, the study intends to prompt the participants to adopt and experiment with new reference values which may eventually cause changes in their teaching behaviors.

Ajzen's (1991) Theory of Planned Behavior

Ajzen (1991) developed the Theory of Planned Behavior to “predict and explain human behavior in specific contexts” (p. 181). A model of the theory is presented in Figure 2.



*Figure 2. Theory of Planned Behavior model. Adapted from “Theory of Planned Behavior,” by I. Ajzen, 1991, *Organizational Behavior and Human Decision Processes*, 50, p. 182.*

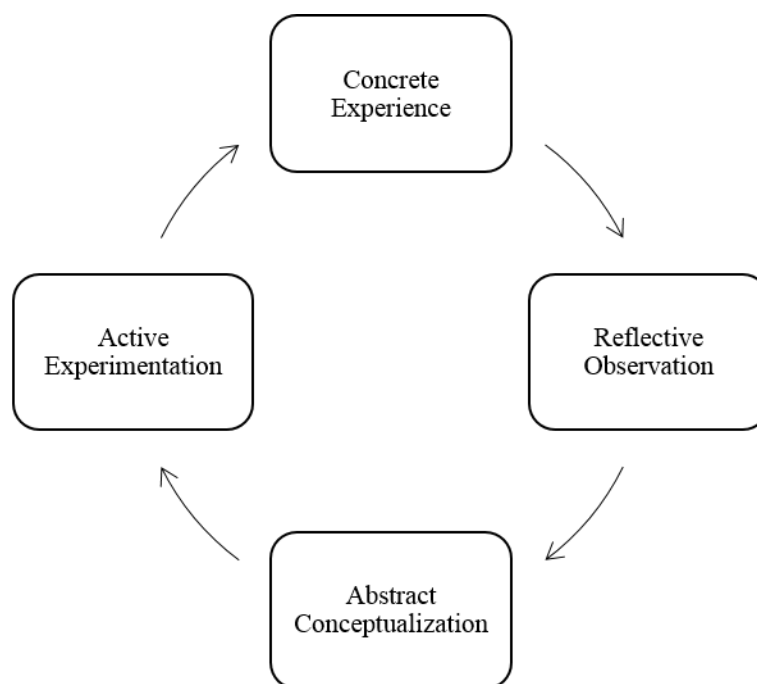
Ajzen (1991) believed that a person's intention to perform a behavior could be determined by three independent factors: the person's attitude toward the behavior, the subjective norm, and the person's perceived behavioral control. The attitude toward the behavior is a measure of how favorable or unfavorable the person judges the intended action to be. The subjective norm is a measure of society's expectation that the person will or will not perform the intended action. The perceived behavioral control is a measure of a person's expected ease or difficulty of enacting an intended behavior. If attitude toward the behavior, the subjective norm, and the perceived behavioral control are favorable, the person will have a stronger intent to carry out the behavior (Ajzen, 1991).

The theory of planned behavior supports several of the characteristics found within critical friendships. A teacher may have stronger intentions to enact a new teaching technique if they hold a favorable attitude toward the technique, which could be the result of perceiving that technique as a favorable norm of a critical friend. If the teacher sees the technique being practiced by their critical friend during a peer observation, the teacher may perceive the technique as relatively easy to perform, increasing their intention of carrying out the behavior. Feedback from a critical friend can greatly influence the three independent factors identified by Ajzen (1991), which in turn increases or decreases the participant's intent to carry out a teaching behavior.

Kolb's (1984) Experiential Learning Theory

Kolb's (1984) Experiential Learning Theory examined the process of learning from the viewpoint of the learner. Dewey's and Schön's theories of reflection were incorporated into the process of learning when David Kolb developed a cyclical theory of experiential learning. In this

theory, Kolb (1984) said a learner acquired knowledge by continually moving through a series of four steps: concrete experience, reflective observation, abstract conceptualization, and active experimentation, as seen in Figure 3.



*Figure 3. The Experiential Learning Theory cycle. Adapted from *Experiential learning: Experience as the source of learning and development* (Kolb, 1984)*

Experiential learning theory consists of a cycle with four steps: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Baker, Brown, Blackburn, & Robinson, 2014). Concrete experience can be an event that happened in the recent past, the present, or vicariously through the accounts of others (Cowan, 1998). The learner then proceeds to reflective observation, critically examining the experience and its context to create generalizations or abstract concepts from their experience. The learner then uses active experimentation to test the theories they developed in the previous step (Cowan, 1998). This cycle creates knowledge that adapts to the learner's current conditions, based on their interactions with their environment (Kolb, 1984). At which point the student enters the cycle,

whether it is experience, reflection, conceptualization, or experimentation, has no effect on learning, as confirmed in a study by Baker et al. (2014). Knobloch's (2003) analysis of ELT within agricultural education revealed it "aligned with the psychological principles that result in significant and meaningful learning" (p. 31), and "experiential learning has been authenticated as being a relevant and effective framework for today's teacher preparation programs" (p. 31). Kolb stated ELT emphasized the role experience plays in the process of learning (Kolb, 1984). The ELT relies extensively on reflection, the process which examines previous actions to determine how to deal with future situations. Reflection, peer observation, and critical friendships are all variations of ELT as each process involves an experience—the observation of a peer's teaching techniques—as well as reflection on the experience, with or without the collaboration of the peer. These methods also focus heavily on abstract conceptualization in the form of suggestions for future teaching, which the participants then utilize in the active experimentation step.

The experiential learning theory explains the process preservice teachers experience as they experiment with teaching techniques and feedback generated by their critical friends. The preservice teacher will have an experience in the classroom, or a concrete experience; reflect on the experience with the critical friend through reflective observation; use feedback to form new generalizations or align it with known concepts via abstract conceptualization; and modify existing techniques or adopt new ones based on feedback from the critical friend through active experimentation.

Carver and Scheier's (1982) interpretation of control theory, Ajzen's (1991) theory of planned behavior, and Kolb's (1984) experiential learning theory were used to develop the theoretical framework of the study. Control theory explains how reference values provided by critical friends stimulate changes on the preservice teacher's environment. The theory of planned

behavior provides a basis for the belief that preservice teachers are more likely to adopt teaching behaviors that are advocated for and demonstrated by critical friends. Finally, the experiential learning theory explains the learning that occurs as the preservice teacher adopts and executes new techniques and reflects on the success or failure of the technique.

H. Summary

This chapter reviewed the literature pertinent to agricultural education teacher training, the definition and practice of reflection, peer observation, and critical friendships. Agricultural education teacher training became a serious issue early in the 20th century, and the profession has seen huge increases in the need for quality practitioners up to the present day. Reflection, the major component and goal of peer observation and critical friendships and an attribute of a highly qualified teacher, is the practice of thinking and analyzing an experience to derive meaning. Reflection was espoused by Dewey (1933) and Schön (1983) as a pathway to developing better teachers. Research revealed participants in the peer observation process and in critical friendships usually viewed the practices as positive and helpful (Hendry et al., 2014; Kohut et al., 2007; Peel & Shortland, 2004), although mutual trust of the other participants was a major barrier to the exchange of meaningful feedback (Farrell, 1998; Handal, 1999). Carver and Scheier's (1982) control theory, Ajzen's (1991) theory of planned behavior, and Kolb's (1984) experiential learning theory formed the theoretical framework, and the concepts of reflection, peer observation, and critical friendship comprised the study's conceptual framework. In Chapter 3, we will examine the methodology.

III. Methodology

Introduction

The purpose of this qualitative study (McMillan & Schumacher, 2009) was to understand the experiences of preservice agricultural education teachers participating in critical friendships. A training module introducing the concept of critical friends to participants, a critical friendship reflection journal, and a standardized lesson plan for the peer observation component were created. The methodology utilized in the study is described in the following chapter, and includes selection of participants, instrumentation, establishment of rigor, data collection, and data analysis.

A. Subjectivity Statement

I obtained a bachelor's degree in agricultural education at the University of Arkansas, and as a master's student I took at least one class with four of the six potential participants prior to the beginning of the study. I also interacted with most of the participants during departmental and club meetings and events.

As a student and as a teacher, I have come to value constructive criticism from others; it is this concept which forms the foundation of critical friendships. I believe that the best way to learn is to make mistakes and learn from what went wrong, a philosophy formed both from teaching experience and from creating art. Creating artwork also taught me to value the input of the outside viewpoint. As an artist, I sought input from others to help improve my skills. As a student teacher, I would talk to my peers about teaching problems whenever I saw them at contests and other events throughout the student teaching experience. These discussions served

as very loosely-defined critical friendships, and assured me that I was not the only student teacher who was having problems.

B. Purpose

The purpose of this study was to understand the experiences of agricultural education preservice teachers participating in critical friendships with other agricultural education majors and with educational majors in other disciplines.

C. Research Questions

This study was guided by the following research questions:

- 1) What are the experiences of agricultural education preservice teachers in critical friendships with other agricultural education majors?
- 2) What are the experiences of agricultural education preservice teachers in critical friendships with education majors in disciplines outside of agricultural education?

D. Selection of Participants

The target population consisted of agricultural education preservice teachers enrolled at the University of Arkansas. As the study was not meant to generalize beyond student teachers at the participating institution, a complete sample of all University of Arkansas agricultural education preservice teachers participating in a student teaching placement in the spring 2016 semester was used in the study. The participants included five females and one male, all in their early 20s.

E. Design of the Study

The study progressed according to the following procedure. First, during the student teaching block course prior to the student teaching experience, prospective participants ($n = 6$) were thoroughly briefed on critical friendships during a one-hour training module delivered by the researcher, with emphasis placed on selecting a critical friend they would trust. The materials used to instruct participants on the critical friends process are included in Appendix A. One half of the participants ($n = 3$) were randomly chosen to select a critical friend in the agricultural education discipline. The critical friend could be any current agricultural education major, a recent graduate of the program, or a current agricultural education teacher with two years of teaching experience or less. The other half of the participants ($n = 3$) were required to choose a critical friend in an education discipline outside of agricultural education. The critical friend in this instance could also be participating in a student teaching experience during the same timeframe, a recent graduate of a teacher preparation program, or a current teacher with two years of teaching experience or less. The literature indicated that having a critical friend with a similar level of experience was most effective, as Schuck and Russell (2005) and Golby and Appleby (1995) suggested that critical friends with different levels of experience might hesitate to offer critique. Five of the six prospective participants initially indicated that they would take part in the study. For the first three weeks of the student teaching period, all participants were required to conduct a weekly discussion with their critical friends and complete a post-conversation critical friendship-focused journal entry, adapted from a critical reflection worksheet developed by Baskerville and Goldblatt (2009). The critical friendship journal also included guidelines and frequently asked questions about critical friendship, prompts for the critical friendship conversations, and instructions for the peer observation component. The

guidelines, prompts, instructions, and a blank journal page were included in Appendix B. The participants were not required to audio record their conversations during the first three weeks of the study in order to allow them to become comfortable talking with their critical friend and find a conversation format that worked for them. During weeks four, five, and six, the participants continued to conduct a weekly discussion with the critical friend and complete a journal entry, and the participants were required to record the critical friend conversations during this time. It was also during this time period that the critical friend was required to participate in a peer observation session with the participant. To control variability within the peer observation process, the researchers developed a 30-minute lesson plan and accompanying PowerPoint about going to college and the opportunities available at the University of Arkansas, located in Appendix C. A faculty member with experience in recruitment evaluated the lesson plan and presentation for face and content validity. The lesson plan and PowerPoint were distributed to the student teachers in week four of the study. The participant-critical friend dyads were required to participate in a pre-observation meeting to achieve an understanding of the school and classroom context, and in a post-observation meeting to collaboratively reflect on the experience, as per the protocol for many studies using peer observation (Cosh, 1998; Cosh, 1999; Kohut, Burnap, & Yon, 2007). The participants were required to record the audio from the post-observation conversation as well. At the end of the student teaching experience, the participants were required to turn in all recorded conversations and journal entries to the researchers, totaling six journal entries and three recorded conversations per participant. The participants were tasked with continuing the weekly conversations and journals as a requirement of the student teaching experience. Figure 5 displays a timeline for the study.

Critical Friends Timeline	
Jan 19-Feb 5	Block classes—choose critical friend
Feb 8-26	Conversation with critical friend 1x per week, no recording; complete journal entry after each conversation
Feb 29-March 18	Conversation with critical friend 1x per week, recorded; observation by critical friend and discussion (discussion recorded); complete journal entry after each conversation
May 6	Turn in all recorded conversations and journal entries for first six weeks; continue conversations with critical friend and journal entries
May 2-13	Conduct and record one-on-one interviews over phone

Figure 5. Projected dates for critical friendship.

Participants were not required to contact critical friends during spring break. Near the end of the student teaching experience, the researcher conducted semi-structured one-on-one interviews with participants about having a critical friend and serving as a critical friend using a protocol adapted from Dahlgren et al. (2006). The interview protocol is located in Appendix D.

F. Instrumentation

Critical friendship reflection journal. A half-page critical friendship reflection journal was developed to assist students in reflecting on the critical friendship process. The questions were adapted from a critical friendship reflection worksheet originally developed by Baskerville and Goldblatt (2009). Content and face validity were established via an examination of the journal by a faculty member with a PhD in Agricultural Education and a Master of Arts in teacher administration. The journal also included guidelines and frequently asked questions about what a critical friendship was and what was required for participation. To help the

participants get started, some prompting questions for critical friendship conversations were also included. An example of the journal is included in Appendix B.

One-on-one interview. A semi-structured interview protocol adapted from a study by Dahlgren et al. (2006) of critical friendships between medical education professionals was used to further examine the participants' experiences in critical friendships. The interview protocol is located in Appendix D. The 30-minute interviews were conducted via phone calls over the course of the last two weeks of the participants' student teaching experience. The researcher used a voice recording phone application to record the interviews. Interview questions addressed participants' perceived teaching styles, changes in their teaching they may have made as a result of participation in the critical friendship, and the perceptions of risks and benefits of participation.

G. IRB Approval

The study was submitted to the Internal Review Board and approved on January 25, 2016 (Protocol # 16-01-470). The letter of approval is located in Appendix E.

H. Data Collection

Data was collected via audio from participant-critical friend conversations recorded by the participants and through audio from one-on-one semi-structured interviews conducted and recorded by the researcher. Participants were instructed to download a call-recording app to their phones and use it to record their conversations with their critical friend. Each participant was assigned a Google Drive folder shared by the researcher, where audio files were to be saved and uploaded following each recording.

I. Data Analysis

The critical friend conversations and one-on-one interviews were transcribed verbatim using ExpressScribe and coded for themes using the constant comparative method (Glaser, 1965). In the constant comparative method of analysis, the researcher sorts incidents in the data into categories, first comparing the incidents with other incidents in the same category as they are coded, and then comparing the incidents in a category with the properties of the category (Glaser, 1965). As the limits of the developing theory become clearer, the researcher focuses on achieving theoretical saturation in the coding categories; at the end of the process, the researcher uses the data to formulate a theory (Glaser, 1965).

J. Rigor

Rigor of the study was ensured through use of Lincoln and Guba's (1985) techniques for evaluating qualitative research, including establishment of credibility, transferability, dependability, and confirmability. Credibility is the confidence that the findings have revealed truth (Lincoln & Guba, 1985), and was established through triangulation of sources as data was collected weekly for the duration of the study and again at the end of the study. Data was also triangulated through the collection of the critical friendship journals. Denzin (1978) and Patton (1999) identified triangulation of sources, or checking the consistency of data sources collected from the same participants at different points in time for example, as a method of establishing credibility. Peer debriefing was also used to discover the assumptions of the researcher and determine the suitability of the methods used in the study (Lincoln & Guba, 1985). Transferability illustrates the applicability of the findings in other contexts (Lincoln & Guba, 1985), and was established using thick description to describe the participants' experiences in

critical friendships and how they fit in the context of the theoretical framework and the existing literature (Holloway, 1997). Dependability refers to the ability to replicate the study and find consistent results (Lincoln & Guba, 1985), and was established via an inquiry audit performed by an expert in teacher education. The expert examined the research process and the findings, and prompted the researcher to reexamine the data and revise themes. Confirmability refers to the degree of influence exerted by the participants on the findings (Lincoln & Guba, 1985), and was established through an audit trail, or a thorough description of the research process and rationale for decisions made regarding the evolution of the study (Lincoln & Guba, 1985). The audit trail is available upon request.

K. Summary

This qualitative study sought to investigate the experiences of agricultural education preservice teachers in critical friendships. Participants were comprised of a complete sample of all University of Arkansas agricultural education preservice teachers participating in a student teaching placement during the spring 2016 semester. Half of the participants were asked to select a critical friend in the agricultural education discipline, and half were asked to select a critical friend in an educational discipline outside of agricultural education. The participants conducted one critical friendship conversation a week, recording the audio from their conversations for a three-week period. The participants were also required to participate in a peer observation exercise with their critical friend. At the end of the student teaching experience, participants were asked to take part in a one-on-one semi-structured interview with the researcher. Data were collected via recorded conversations and one-on-one interviews. The conversations and interviews were transcribed and subjected to constant comparative analysis, with the results reported in the next chapter.

IV. Findings

Introduction

The purpose of this qualitative study was to understand the experiences of agricultural education preservice teachers participating in critical friendships with other agricultural education preservice or early career teachers and preservice or early career teachers in other educational disciplines. Participants were briefed on the critical friendship concept and allowed to choose their critical friend within the specifications of their assigned group. The critical friendship dyads practiced participating in critical friendship conversations for three weeks without recording anything in order to become more comfortable with the format and with each other, recorded their conversations for weeks 4 through 6, and conducted a peer observation and reflection. Participants also engaged in semi-structured interviews conducted by the researcher about their critical friendships at the end of their student teaching experience. Critical friendship conversations and reflective interviews were transcribed and coded for themes using the constant comparative method. This chapter explores the major findings of the study through the main and sub-themes that emerged from the data.

Of the six potential participants in the spring 2016 student teaching cohort, three chose to complete the entire study. Two of the student teachers were placed at the same school and served as each other's critical friend, and the third participant selected a critical friend outside of agricultural education. Different main and sub-themes emerged from the critical friendship conversations, depending on whether the critical friendship was between two agricultural education preservice teachers or between an agricultural education preservice teacher and an early-career teacher in another discipline. This was not the case for the interview data, where the same two themes were seen in the interviews of participants in both types of critical friendships.

Four main themes emerged from the conversations between Participant 1 (P1) and Participant 3 (P3), the two participants in the agricultural education—agricultural education critical friendship: concern about dealing with the uncooperative minority of students; discussion of potential solutions; openness to feedback; and uncertainty about problems and solutions. Three main themes emerged from the conversations between Participant 4 (P4) and their non-agricultural education critical friend: establishing common ground as teachers, seeking reassurance, and openness to feedback. The two main themes that emerged from interviews with P1, P3, and P4 were critical friendship as a valuable experience and critical friendships work under certain conditions.

A. Conversation Themes

Agricultural education—agricultural education critical friendship. Analysis of the critical friendship conversations between P1 and P3 yielded four major themes. The theme of concern about dealing with the uncooperative minority of students included examples of the participants describing their teaching problems and concerns to one another using specific examples of prior experience. The theme of discussion of potential solutions included four sub-themes: seeking additional understanding of the situation, solutions based in personal experience, untested solutions, and scripting potential responses. The theme of openness to feedback included examples of the participants stating that they were open to suggestion or promises to implement feedback. The theme of uncertainty about problems and solutions included three sub-themes: novice teachers did not know how to handle some situations, doubt about the effectiveness of a known solution, and doubt about the ability to change.

Concern about dealing with the uncooperative minority of students. Throughout their critical friendship conversations, the agricultural education-agricultural education critical friend pair typically began by describing a specific problem related to teaching practice that one of the two had recently experienced, such as “five of them [the students] are just—they don’t pay attention, they don’t wanna do what I ask them to do” (P1-P3 conversations, p. 1 lines 3-4), and “most of my class does really well, but I have a handful of students that want to sit on their phone, constantly, no matter what, no matter how many times I ask them to get off” (P1-P3 conversations, p. 3 lines 18-19). Nearly every teaching problem described by the participants involved just a few students and usually involved a lack of motivation, engagement, or attentiveness. The process of describing teaching problems and probing for more details by the critical friend often prompted the participant who brought up the problem to engage in reflection about the details of the situation. In describing a problem they had with several students, P3 reflected on the details of the situation:

P3-sigh-There's only like, f--there's three kids that I don't think that they're learning anything, because half the time, they're just looking off into space....but, I can't test that ability.

P1-Mmhmm.

P3-I mean, they turn their worksheet in like they're supposed to...well, one of them doesn't, but most of them--they, the other two do, and I just, I guess I don't know...where to go....(P1-P3 conversations, p. 9 lines 22-26)

P1 and P3 usually did not have to take much time to think about potential solutions after hearing a description of the problem, although in the case of P3’s suspicion that students were completing assignments without actually learning anything, P1 felt that the problem was something they “would have to like, ponder for a while” (P1-P3 conversations, p. 9 line 27).

In one particular instance, the participants used their critical friendship to make sense of an unanticipated teaching problem soon after it occurred and again after a few days had passed. P1 and P3 stated that, while at a contest, one of their students had approached them and told them an inappropriate joke. Reflecting on the incident after it had happened, the participants said that they “looked at one another and didn’t really know what to say” (P1-P3 conversations, p. 7 line 26) and “each of us, you know, kind of...just were like...in awe-shock” (P1-P3 conversations, p. 7 lines 24-25). In that conversation, P1 thought they acted appropriately at the time while P3 thought they should have taken action of some kind, but both participants agreed that they should and would approach a similar situation differently in the future: “next time, like...you know, we should probably say...‘We don’t find that appropriate...please do not say anything like that in front of me or in my classroom...or on a trip, again” (P1-P3 conversations, p. 8 lines 1-3). After P1 or P3 brought up a teaching concern, the other participant would ask for more details or propose a potential solution.

Discussion of potential solutions. After listening to the initial problem, the critical friend would collect additional information about the teaching problem and then give feedback and scripted responses to students based on personal experience as well as suggest potential solutions and scripts that they had not yet used.

After listening to their partner’s teaching concerns, the critical friend usually tried to seek additional understanding of the problem by asking a clarifying question. Regarding P3’s five problem students, P1 asked if there were “one or two that like, kind of egg it on, that really start up” (P1-P3 conversations, p. 1 lines 11-12). This question prompted P3 to provide further details about the context of the problem. P1 then asked if the group of uncooperative students respected the cooperating teacher (P1-P3 conversations, p. 1 line 28). P1 then used this information to

recommend a solution that they had used themselves. After P1 described their problem with cell phones later in the conversation, P3 asked “do you give ‘em daily participation points?” (P1-P3 conversations, p. 5 line 3), and proceeded to recommend implementing a three strike rule, where every strike is a grade deduction (P1-P3 conversations, p. 5 lines 16-17).

The proposed solution was usually presented via a detailed description of an experience where the critical friend had successfully implemented the technique. This description might also include relevant details about the situation it was used in, and a description of how the students reacted to the implementation of the technique. P1 demonstrated this theme while presenting another option for handling P3’s problem students:

Oh my goodness, [student] was giving me so much...trouble, and whenever I pulled him out of class... and, er, class was over and I asked him to stay back, and I just talked to him for a few seconds. I was like "Hey...dogging [sic] on you hour--all hour is not what I want to do, it's hard on me, it's hard on you, it's annoying, it wears me out...I just need you to do your work. This is my job, and I'm your teacher, that's all I'm doing. I'm not trying to pick on you, I just want you to get your work done. He's like...."Yeah, I understand, I don't know why I was being like that," and honestly, I haven't had much of a problem since.... (P1-P3 conversations, p. 2, lines 16-24)

Also present in that piece of data was an example of scripting, where the critical friend paraphrases what they actually said to the student while attempting to implement a solution.

Though not as common, the critical friend would also present suggestions for improvement that they had not yet utilized in their classroom. P3 made the following suggestion in response to P1’s cell phone conundrum:

And then another thing that, um, I haven’t got to try yet, but [cooperating teacher] said, he said, if you notice a kid that’s not paying attention, he said "Don't embarrass them...but, just throw their name in when you're talking," so like, if you were talking about...I don't know, wrenches, and you said, "Yeah, you need a 5/16, isn't that right...[student name]?" (P1-P3 conversations, p. 4 lines 10-13)

Again, P3's proposed solution included an example script that P1 could follow in implementing the solution in the future.

As exemplified in two of the above quotes, a prominent feature of many of these detailed descriptions of potential solutions was a script that the participants had already used or would consider using in solving a similar problem. As P3 put forth the idea of using a cell phone basket, they included the script they would use in introducing the concept to students:

I would tell them, you know, explain it to them, say "Y'all have this privilege to have your cellphones...I don't want to have to take away this privilege...but if it...", and I would actually bring the basket, and go ahead and get the basket, make the basket, put it on the desk. (P1-P3 conversations, p. 4 lines 18-21)

The participants also utilized the script rehearsal technique in discussing how they should have responded to the student who told them an inappropriate joke. As the critical friend gave feedback and suggested ideas, the other participant would indicate whether or not they thought the proposed suggestions would work in their teaching situation.

Openness to feedback. Overall, these participants were very accepting of the constructive criticism offered to them by their critical friend, especially if the feedback they received fit in the established classroom culture. P1 especially liked P3's suggestion of a three strikes rule for cell phones because it was similar to the cooperating teacher's classroom philosophy: "Yeah, I think it'd work because [cooperating teacher] really implements that workplace thing" (P1-P3 conversations, p. 5 line 20). At this point, P3 encouraged P1 to take their advice and learn from their previous mistakes regarding student discipline, which involved following through with enforcement of rules. At the end of the conversation, P1 stated that they were "going to try that...the basket thing and the three strike" (P1-P3 conversations, p. 7 line 16), and P3 said they would "take all suggestions for eighth grade now" (P1-P3 conversations, p.

7 line 17). Participants often verbally indicated that the suggested solution might be something they would attempt to implement in their classroom. However, there were a few teaching problems for which neither participant had an effective solution, and doubts were expressed about the ability to change.

Uncertainty about problems and solutions. In discussing their teaching issues, the participants expressed uncertainty about how to proceed and doubt about the solutions they had already attempted to implement and about their ability to change themselves or their students.

The description of the teaching problem was usually followed by an admission of lacking knowledge of how to handle that particular situation. P3 admitted that “I don’t know, I’m just...struggling with, should I keep stuff in my classroom the same, or should I change it?” (P1-P3 conversations, p. 9, lines 7-8), and P1 stated that “I just don’t know how to not keep harping on those few students while the rest of them are doing fine” (P1-P3 conversations, p. 3, lines 25-26).

However, in several instances, the participant describing the problem would also state that they knew of a potential solution to their problem, but that they preferred to avoid resorting to such an action as they perceived it to be ineffective or troublesome. P3 expressed doubt that physically separating problem students would cause any change in the students’ behavior (P1-P3 conversations, p. 1 lines 26-27), and P1 stated that they “don’t want to punish the whole group because a few of them won’t get off their phones” (P1-P3 conversations, p. 3 lines 26-27). On two occasions, after P3 had given a description of a potential solution, they also included a caveat saying that although the solution worked for them, it may not work for the other partner

for their particular problem. P3 stated that they had successfully used small group work in connecting motivated students with unmotivated students, but conceded that “I know not everything’s going to be group work” (P1-P3 conversations, p. 11 line 22). In one scenario, P3 had consulted their cooperating teacher first about how to deal with a few students who refused to pay attention during class. The cooperating teacher described two solutions typically taken by teachers: ignoring the problem behavior or spending all day yelling at the students, neither of which was a solution that P3 wanted to use. In that instance, P3 wanted to change their teaching practice to be more effective; but in reference to a different situation, P3 expressed hesitation towards changing their teaching practice. The cooperating teacher helped P3 realize that they did not follow up on enforcing their classroom rules; when P3 brought this issue up in an effort to help P1 find solutions to their discipline problems, P3 said that they were not likely to change their own practice because they did not want to be seen as a mean teacher. In two instances, the critical friend explained that they had encountered a similar problem, but even after seeking the advice of more experienced educators, found no solution to the problem and suggested that the partner would not find a solution either. P3 stated that they had several students who turned in work but felt that they were not actually learning anything (P1-P3 conversations, p. 9 lines 8-10). P1 reported experiencing a similar problem, and after discussing it with the cooperating teacher, said “it kind of sounds like it was one of those things where...you just gotta l—let it be, unfortunately” (P1-P3 conversations, p. 10 lines 1-2) and that “I don’t think there’s much you can do, really...unfortunately” (P1-P3 conversations, p. 10, lines 5-6).

P1 and P3 used their critical friendship to express concerns about uncooperative students, solicit new ideas and feedback applicable to their teaching concerns, and admit to uncertainty

about how to handle teaching problems. P4 and their non-agricultural education critical friend used their critical friendship for slightly different purposes.

Agricultural education—non-agricultural education critical friendship. The recordings of the critical friendship conversations between P4 and the non-agricultural education critical friend were fewer in number and much shorter in length than P1 and P3's conversations, and thus yielded less data. Data from the conversations between P4 and their critical friend revealed three major themes: establishing common ground as teachers, seeking reassurance, and openness to feedback.

The theme of establishing common ground as teachers included examples of P4 discussing a teaching concern and the critical friend confirming that the concern was something that they had also encountered as a teacher. The theme of seeking reassurance included examples of P4 talking about solutions they had already used to solve their teaching problems and the critical friend agreeing with the choice or mentioning that they had used the same technique. The weakest theme was openness to feedback, which included an example of P4 stating that they would attempt to implement a suggestion offered by the critical friend.

Establishing common ground as teachers. P4 and their critical friend used their conversations to discuss some teaching problems, but spent most of their time reflecting on what happened in their classrooms that week. This discussion of teaching events allowed P4 and their critical friend to establish common ground as educators in different grades and subjects. Similar to P1 and P3, P4 and the critical friend's teaching problems mainly dealt with student motivation and engagement. P4 said that they were having problems with student motivation towards completing a unit on electricity and that they did not really know how to solve their problem.

The critical friend responded by saying “I’ve been having the same motivation issue in my class too” (P4-CF conversations, p. 1 line 15), followed by an example of a solution that they had implemented in their own classroom. However, one of the problems P4 discussed with their critical friend involved their uncertainty in being directed by their cooperating teacher to skip a unit in a very structured curriculum used in the agriculture classes. Diverging from the patterns seen in P1 and P3’s conversation, P4 and their critical friend typically spent most of the conversation reflecting on their actions in the classroom that week. Also differing from P1 and P3’s conversations was the fact that the non-agricultural education critical friend did not bring up problems they had in their classroom to ask for help from P4 in finding suggestions or new ideas.

Although the non-agricultural education critical friend did not ask for feedback from P4, they did, on one occasion, give suggestions to help P4 improve their teaching practice. The critical friend only asked one question for clarification, but the way it was worded was of note: “Why do you think they're not getting electricity?” (P4-CF conversations, p. 1 line 8). This wording differed from that found in the clarifying questions asked by P1 and P3, which mainly focused on deriving a better understanding of the context of the problem. The critical friend’s question, while eliciting some additional understanding of the context, focused more on encouraging P4 to reflect on the reasons for the students’ lack of motivation. P4 and their critical friend used their critical friendship to find a common ground as teachers in different subjects; P4 also used the critical friendship to attain reassurance from their critical friend that they were undertaking the correct actions as a teacher.

Seeking reassurance. In each conversation, the non-agricultural education critical friend mentioned that they had experienced a similar situation to the one described by P4, and suggested a solution that had worked in their classroom or reaffirmed the action taken by P4. In

response to P4's unmotivated electricity students, the critical friend described a situation where they had successfully used extrinsic motivation to encourage a student:

I have one kid who never gets his work done, and I found out that he will get his work done if he gets to go see, gets some extra rewards--rewards...he--if he gets his work done in the morning, he gets to go to his brother's classroom and see their classroom pet after recess every day. (P4-CF conversations, p. 1 lines 5-8)

The critical friend reassured P4 that skipping units in highly structured curriculum was not a rare occurrence for educators:

Yeah, our curriculum is very structured too, like CASE. Um...it doesn't leave much room for...uh, changes though, but I think it's okay if you skip some things...I do that quite a bit in my classroom when I don't think it's...good for our kids...think sometimes...it just doesn't fit the kids that you have in your class, so you kind of have to skip and do something a little bit different...to make it make sense, for those kids. (P4-CF conversations, p. 2 lines 6-10)

In discussing how to maintain student motivation before spring break, however, the critical friend said they were having the same problem but did not mention what their potential solution would be. The critical friend helped P4 confirm that their teaching concerns were not exclusive to agricultural education teachers, and often agreed that solutions utilized by P4 were similar to solutions that they would use in their classroom. P4 indicated that they were open to receiving this feedback.

Openness to feedback. P4 was receptive to the critical friend's feedback, and based on later conversations, actually implemented the particular suggestion offered by the critical friend. After the critical friend suggested trying to find a reward of some type to motivate the students, P4 agreed that they had been "trying to think of some...kind of extrinsic motivators like that" (P4-CF conversations, p. 1 lines 21-22), and that "maybe if I...have a reward...that would kind of get them motivated to get this over with so that they can move on to the next thing--er, move on to what they want" (P4-CF conversations, p. 1 lines 24-25). P4 expressed

belief that the suggestion of using a reward was something that would work for them in their particular situation. In the next week's conversation, P4 mentioned that "...we finished our lesson on--in agricultural mechanics, we finished our last electricity lesson on three- and four-way switches, annnd...it seemed like it finally clicked, like, they were finally getting it" (P4-CF conversations, p. 2 lines 15-17).

P4 and their critical friend used their critical friendship to establish common ground as teachers, sought reassurance that they were experiencing the same problems and implementing similar solutions, and expressed their openness to feedback. These purposes differed from the purposes sought by P1 and P3; however, interview data from P1, P3, and P4 revealed the same two themes.

B. Interview Themes

Agricultural education—agricultural education critical friendship. Data from the interviews with P1 and P3 yielded two major themes: critical friendship as a valuable experience and critical friendships work under certain conditions. The theme of critical friendship as a valuable experience was comprised of statements about the advantages of having an outsider's perspective, discussion of teaching concerns, and obtaining new ideas and feedback. The theme of critical friendships work under certain conditions was derived from statements about the circumstances and situations identified by the participants as factors that could potentially inhibit a critical friendship, but ones that they had managed to overcome.

Critical friendship as a valuable experience. P1 and P3 agreed that participating in a critical friendship with each other was helpful for several reasons. The ability to access an outside viewpoint on teaching concerns was a benefit cited by both participants, a sentiment

summarized by P1: "...it helped me so much, umm. It was nice to have somebody to bounce ideas and concerns off of" (P1 interview, p. 2 lines 17-18). P3 gave an example of how they sought input, stating that participating in a critical friendship "just kind of allowed us to...bounce our ideas off, say 'this is the difficulties I am having, how would you handle this situation?'" (P3 interview, p. 2 lines 1-2). P1 explained that they have always tried to maintain a friendship with an individual who is willing to serve as a counselor and "sounding board" (P1 interview, p. 5 line 18). Participation in a critical friendship allowed both participants to discover something about themselves as a teacher of which they were not previously aware. While P1 came to realize that they "don't joke around with my students during lecture time" (P1 interview, p. 4 line 11) and wanted to change this aspect of their teaching, P3 reflected on their experience with the reality of teaching: "I knew teaching wasn't perfect, but I guess I didn't realize going in that there was gonna be...so many...I don't want to say difficulties, but, I mean, they were" (P3 interview, p. 3 lines 23-24). Participants found that being observed by their critical friend was another useful aspect of the relationship as it provided more external input. P1 admitted that, while teaching, they didn't "necessarily think about, at that moment...so much the things I'm doing as, as whenever I watched somebody else" (P1 interview, p. 2 lines 24-25) and that the critical friend helped them identify "a lot of stuff I wouldn't have realized" (P1 interview, p. 4 lines 32-33). P3 identified accountability as an additional benefit of being observed by their critical friend:

When I am observed and someone gives me like, the constructive criticism, I am more likely to apply that to myself because, you know, next time they come and see me, I want it to be perfect, because that's just who I am as a person. (P3 interview, p. 2 lines 7-9)

Both participants reflected on the usefulness of talking about teaching problems on a regular basis:

We would see each other and start talking about something we're having a problem with, and I would give advice to [P3], [P3]'d give advice to me. (P1 interview, p. 2, lines 15-16)

Basically we each had a problem a week, um, I mean we had multiple problems. But there was a couple weeks we talked about, you know, I had a couple problems and [P1] only had one, or, you know, vice versa. (P3 interview, p. 1, lines 33-35)

The participants also mentioned that their conversations as critical friends were an opportunity for them to talk about situations that went well during the week, in addition to the parts of their teaching practice they could improve: "I think as much as we talked about what we could change and what we could do different, we talked about...what we were doing and were doing well" (P1 interview, p. 3 lines 7-8). P3 recalled a specific example of negative feedback that P1 had given P3 which helped them identify something they needed to improve:

The critiques that I got, it was—they were both—they weren't like negative negative, but they were, you know, they were enough that it's something that I need to work on, which was engagement of students, cause there was a few in the back of the room that just don't pay attention—they never pay attention to any class. (P3 interview, p. 2, lines 26-29)

P1 also referenced the encounter the two had with a student who told them an inappropriate joke despite the participants' declining to hear it. The participants had felt unprepared for such a situation and, through the use of each other as a critical friend, reflected on the situation together and brainstormed ideas for what to do if such an incident occurred again in the future: "it was nice to have one another there and talk about what we felt comfortable with allowing and not allowing" (P1 interview, p. 4 lines 6-7).

P1 and P3 both described specific situations where they had discussed a problem with the other, exchanged useful feedback, and then implemented the feedback or new idea in their classroom. P1 said that their critical friend "gave me a lot of good ideas and different strategies for managing my students trying to get away with using their cell phones" (P1 interview, p. 3 lines 16-17), and that these ideas had been incorporated into their teaching style. P3 also helped

P1 “think of different ways that [P1] could keep [the students] focused and on-point and not get bogged down” (P1 interview, p. 3, lines 24-25). P3 used a suggestion from P1 to keep students on task:

P3-So one thing I did, I made sure in that class, which is my Survey class, I made sure that I always asked questions all the way around the room, and when they were working on worksheets, I was trying to go all the way around the room instead of just staying kind of halfway across the room...

Researcher-Okay.

P3-...so I took [P1's] advice, and used and applied that in that class. (P3 interview, p. 3 lines 5-10)

P3 reflected on receiving both positive and negative feedback: “[the critical friend] gave me both and I think that helped, that way I know that [the critical friend] didn't just see negative in my teaching, but [they] also saw the positive” (P3 interview, p. 2 lines 32-33). Another valuable benefit of critical friendship was the opportunity for both participants to observe and experience a different teaching style. For P1, the observation of a peer allowed them the opportunity to reflect on and examine their own teaching practices. P1 talked about how they compare their own teaching style to that of the person they observe:

I really pay attention to what they're doing and think, am I doing that, or not doing that, or am I doing enough of it, am I doing too much?... Or how can I, how can I incorporate what they're doing and kind of tweak it and make it work in my classroom. (P1 interview, p. 5 lines 27-32)

P1 and P3 both identified specific instances where they had incorporated into their classroom a teaching technique they had observed being used by the critical friend. By observing their critical friend, P3 said that they “learned a couple, like, ideas, like the way that [critical friend] handles...a couple of [their] students that didn't like to pay attention” (P3 interview, p. 1 lines 19-20) and that they were then “able to take that and kind of apply it to my teaching style” (P3 interview, p. 1 line 21). When P1 was asked if they had adopted any features of P3's teaching

style, P1 said something very interesting: “definitely the joking m—a little bit more, being a little more lighthearted in the classroom” (P1 interview, p. 4 lines 16-17). However, P3 doubted they were capable of incorporating every idea gleaned from peer observation, explaining that:

When I go watch someone else and try to apply it to my teaching style, it doesn’t always happen because...I—nobody has seen me teach like that, so there’s no one there to, I guess, judge me, and see if it is perfect...(P3 interview, p. 2 lines 11-13)

The participants agreed that critical friendships were something that other teachers should try to incorporate into their teaching practice, and that working with the critical friend was worth the added effort. P3 hypothesized that the concept might work well in their cooperating school, as it was a multiple-teacher department, and that the teachers would potentially benefit from meeting on a weekly basis to discuss their teaching problems and gain feedback from peers. P1 once again cited the benefits of obtaining an external opinion as their justification for recommending critical friendships in regular teaching practice. In rationalizing the additional effort required to undertake a critical friendship, both participants mentioned some important conditions that had to be met for the relationship to succeed.

Critical friendships work under certain conditions. While they identified the practice as one that helped them improve as teachers, the participants cautioned that their particular situation allowed them to overcome several risks and problems associated with critical friendships that might otherwise impede the establishment of such a relationship. As the label implies, giving criticism is an integral component of a critical friendship. Being open to giving and receiving criticism was identified by the participants as a condition essential to forming a critical friendship. P3 mentioned that “there is some people I know that can’t handle [criticism] very well” (P3 interview, p. 4 line 14) who “could possibly not do very well in this” (P3 interview, p. 4 line 12). While both participants said that they did not hesitate to bring up issues

with their critical friend, P1 mentioned that “there was a few times I felt a little hesitant to say something” (P1 interview, p. 2 lines 30-31). P3 believed that some teachers might be resistant to the idea of receiving criticism because “they believe that their teaching style is perfect and everything’s great” (P3 interview, p. 4 lines 23-24). However, the unique circumstances of the critical friendship between P1 and P3 made this process less painful for both parties. P3 stated that since they were friends with P1 before the study began, they were more comfortable with each other and felt more freedom to give criticism and discuss teaching issues freely. P3 explained that they would have found it difficult to give criticism to their critical friend if they “didn’t know [Participant 1] so well” (P3 interview, p. 2 line 16) and since they “were pretty good friends, so it was easier for me to give [the critical friend] criticism” (P3 interview, p. 2 lines 17-18). P1 noted that engaging in a critical friendship and practicing giving criticism helped them become more comfortable with the practice, and eventually made it easier to continue being a critical friend: “realizing that [the critical friend] knew I was doing it out of...um, genuine concern and being helpful, it made it a lot easier” (P1 interview, p. 2 lines 32-33). Neither participant reported being resistant to receiving criticism, although P3 mentioned that there were “a couple things that if you criticize me on I get angry, but, um, as far as my teaching goes, I think it helps me as a teacher, be better” (P3 interview, p. 2 lines 22-24). The participants’ philosophies on criticism also appeared to make the potentially controversial exchange of criticism an easier process. P1 stated that “receiving criticism is something I’ve always tried to work on being okay with” (P1 interview, p. 3 lines 2-3), while P3 preferred to receive constructive criticism because the idea of an external expectation of change was a more effective motivator for them than internal expectations. P3 thought the concept may not work as well with

teachers who did not see in themselves a need for improvement, and stated that the success of a critical friendship “depends upon what environment it’s used in” (P3 interview, p. 4 line 26).

The participants felt that engaging in a critical friendship was helpful to their teaching practice, but were skeptical that other student teachers would share their sense of ease regarding the process. As the participants were located at the same school, P1 noted that “it was kind of a, kind of natural being there, um, having my critical friend at the same school as me” (P1 interview, p. 2 lines 9-10) and that “it wasn’t too hard to sit down together and, you know, have these conversations, and talk” (P3 interview, p. 5 lines 6-7), but cautioned that critical friendships among student teachers in different schools might be inhibited by a spatial barrier. P1 thought that although it was probably more difficult to have a critical friendship with an individual in another school, the relationship would still benefit both parties. Both participants noted that developing a critical friendship involved a significant input of time, and P1 hypothesized that this factor may affect the success of a critical friendship between students in different schools: “maybe people that, um, don’t have their critical friend in the same school, I could see that being...hard to...try to apply (inaudible), even phone calls” (P1 interview, p. 5 lines 9-10). P3 noted that the oral reflection practiced in a critical friendship was much easier to carry out than written reflection, and stated that the pair:

...have no problem chit-chatting or talking, but, just sitting down and filling out a piece of paper—I don’t know why, I don’t know if it’s going through student teaching or what it is, but just sitting down and filling out what we talking about was hard. (P3 interview, p. 4 lines 5-7)

As they reflected on the difficulties and ease of being in a critical friendship, the participants reinforced their argument with authentic experiences they had encountered throughout the semester.

Interviews with P1 and P3 revealed that the two participants valued their experience of engaging in a critical friendship, but that certain conditions were in effect that made it easier for the two to connect and develop trust. Although P4 used their critical friendship in a different manner than P1 and P3, they still found the experience to be valuable but contingent on certain conditions being met.

Agricultural education—non-agricultural education critical friendship. Data from the interview with P4 yielded the same two themes from P1 and P3’s interviews: critical friendship as a valuable experience and critical friendships work under certain circumstances.

Critical friendship as a valuable experience. In P4’s own words, they thought “it was really important to do the—the critical friend thing” (P4 interview, p. 5 lines 13-14) as the participation in a critical friendship imparted many benefits to those involved. P4 worked with a first-year teacher who had just finished earning a master’s degree. Reflecting on their level of teaching expertise, P4 admitted that “I know first of all that I’m not...a expert, uh, at all, um, this was my first semester teaching so I know that I have a lot to learn” (P4 interview, p. 3 lines 1-2). Inexperience as a teacher was seen as advantage in this situation, as P4 mentioned several times that it was helpful to be “working with somebody who...um, is also struggling” (P4 interview, p. 4 line 31).

P4 identified the outsider’s perspective as one of the benefits of participating in a critical friendship. Having a critical friend in a different educational discipline was perceived as an advantage by P4, who said that the critical friend “wasn’t afraid to, um, tell me what was...what [they] saw kind of from, a, um, an outsider’s perspective, um, being, you know, in—not in agricultural education” (P4 interview, p. 3 lines 11-13). The critical friend helped P4 realize

something about themselves that they were previously unaware of: “I kind of try to make every experience into a learning experience, um, and I guess I—I—I really had no idea that I did this” (P4 interview, p. 4 lines 14-15). P4 believed that being observed by their critical friend and receiving honest feedback was an essential part of trying to improve themselves as a teacher. Talking with the critical friend also allowed P4 to learn more about the educational background of their students: “it's also good to know from their standpoint like, what the students that I have have been through, um...like with instruction and everything like that; what they're taught when they're younger, um, in a...non-ag class” (P4 interview, p. 2 lines 13-15). Although the participant saw value in having a critical friend in a discipline outside of agricultural education, they did not adopt any features of their partner's teaching style because they found their particular settings and situations to be too disparate.

P4 noted that working with a critical friend helped them examine their teaching problems, and “gave me a, uh, chance to not only to vent about haha, uh, the situations that I had, but, um, to...you know, be, you know, working with somebody who...um, is also struggling” (P4 interview, p. 4 lines 29-31). When faced with some unmotivated students, the participant recalled how their critical friend helped them find a solution to their teaching problem:

[Critical friend]... told me to find something that would motivate them other than the content itself, to um, you know, to motivate them to--to get it done and get it done correct. And, I figured out that welding was like a huuuge thing that they wanted to get to and, at the end of the semester after all of the...um, units were taught, we would go over projects in [sic] welding, and all kinds of stuff like that, and they would get to weld a lot more. (P4 interview, p. 4 lines 5-9)

P4 felt that they received “a lot more positive critique than—than negative really” (P4 interview, p. 3 line 6) and provided an example of how they used the feedback they received: “I would make little notes based off of my critique, and then try to apply it, uh, to my next lessons” (P4

interview, p. 3 lines 33-34). P4 recalled how their critical friend was even more honest with them regarding teaching issues than their supervising teachers:

[The critical friend] didn't really hold back very much, so that was--that was good for me to hear, uh, especially since I know that [the CF's] not trying to...you know, cut me down, or uh, anything like that. [The CF]...wanted to see me improve as a teacher. (P4 interview, p. 3 lines 15-18)

P4 mentioned that observing and being observed were additional benefits of the critical friendship. Observing someone else teaching allowed P4 to “see things that, uh, other people do that work really well, or that might not work so well, um, in someone else's teaching” (P4 interview, p. 1 lines 31-33). The participant stated that they tended to look for ideas that would work for them in their particular teaching situation, and noted that observing the critical friend had exposed them to a teaching style that was much different than the lecture-type style they had grown accustomed to during college. P4 said the transition from a teacher-centered style to a student-centered style “was different” (P4 interview, p. 2 line 27). Finally, P4 agreed that the benefits of participating in a critical friendship were worth the extra effort to maintain the relationship. P4 also identified several conditions which made it easier for them to establish and maintain a critical friendship.

Critical friendships work under certain conditions. Like P1 and P3, P4 identified some key requirements of participating in a critical friendship that were potential barriers to participation, but were ones that their unique circumstances allowed them to overcome. P4 recognized that giving and receiving criticism could be a major roadblock to establishing a critical friendship:

...if you wanna be a better teacher, and if you ask somebody to observe you and be honest with you, then yeah, be ready for.. some criticism, annnd, if you're not ready for it, then, you know, that--it might be--might be difficult. (P4 interview, p. 5 lines 2-4)

The participant admitted to hesitation on the part of being a critical friend, saying that they “did find it difficult to--to criticize...other peoples', um, teaching. It's kind of uncomfortable for me, so, that was, you know, a little difficult” (P4 interview, p. 2 lines 32-34). Fortunately for P4, their critical friend did not hesitate in offering feedback and critique, and P4's knowledge of their need to improve as a teacher and personal philosophy of being open to critique made the process easier. Like P1, P4 also mentioned that it was easy to accept criticism when they realized that their critical friend was not doing it just to be cruel, but offering it in the spirit of helping them improve as a teacher.

Like P1 and P3, P4 knew their critical friend very well before beginning the process, and that this familiarity made it easier to form the critical friendship and facilitate the exchange of honest feedback. P4 was more hesitant than P1 and P3 about recommending the critical friendship process, even though they felt that it had benefitted their teaching practice. The participant noted that they were “not sure how other people...liked it” (P4 interview, p. 5 line 14) and that they knew “the others are not in the same situation as me, so...um, in my opinion, for my situation, it was great” (P4 interview, p. 5 lines 19-20).

The interviews with P1, P3, and P4 revealed that the participants felt that critical friendships were valuable experiences, and that the participants were able to recognize several conditions that made it easier for them to form and maintain critical friendships.

C. Summary

Three participants chose to take part in and complete the study. Two of the participants formed a critical friendship together, and the other participant formed a critical friendship with an early career teacher in another discipline. Analysis of critical friendship conversations

revealed different themes for the two different types of critical friendships. Four major themes emerged from the conversations between the two agricultural education critical friends, P1 and P3: concern about dealing with the uncooperative minority of students; discussion of potential solutions; openness to feedback; and uncertainty about problems and solutions. Three major themes emerged from the conversations between the agricultural education preservice teacher and the early career teacher in another educational discipline, P4 and the critical friend: establishing common ground as teachers; seeking reassurance; and openness to feedback. Interviews with P1, P3, and P4 revealed the same two main themes: critical friendship as a valuable experience and critical friendships work under certain conditions. The themes presented a look into the experiences of agricultural education preservice teachers participating in critical friendships. In Chapter 5, these findings will be linked to discussed and compared and contrasted with the literature and the theoretical framework. Implications for practice, limitations of the study, and recommendations for future research will also be examined.

V. Discussion

Introduction

The purpose of this study was to understand the experiences of preservice agricultural education teachers participating in critical friendships with other preservice agricultural education majors and with early-career educators in other disciplines. The research questions this study sought to answer were:

- 1) What are the experiences of agricultural education preservice teachers in critical friendships with other agricultural education majors?
- 2) What are the experiences of agricultural education preservice teachers in critical friendships with education majors in disciplines outside of agricultural education?

Qualitative methods were used to develop a rich understanding of the participants' experiences in critical friendships. Participants were briefed on the concept of critical friendship, and then randomly assigned to one of two groups, one where they had to choose a critical friend in agricultural education and one where the critical friend must be in an education discipline outside of agricultural education. Participants were tasked with contacting their critical friend each week and having a conversation about teaching concerns, and then reflecting on their conversations in a journal. The journal included instructions and several examples of prompts for conversations; however, participants were not required to follow those particular formats. To allow the participants to become comfortable with the process and with each other, they did not record the first three weeks of conversations. The audio from the conversations for weeks four through six were recorded. Participants were also tasked with arranging for their critical friend to observe them teaching a prepared lesson plan and reflecting on the experience together, which counted for one of their recorded conversations. At the end of the semester, participants engaged in one-

on-one focused interviews about their experiences in a critical friendship. Conversations and interviews were transcribed and coded for themes.

The conversations between the two agricultural education preservice teachers, P1 and P3, yielded four main themes: concern about dealing with the uncooperative minority of students, discussion of potential solutions, openness to feedback, and uncertainty about problems and solutions. Concern about dealing with the uncooperative minority was demonstrated by the numerous times P1 and P3 described teaching problems to each other that dealt with unmotivated, unengaged, or inattentive students. Four sub-themes emerged from the major theme of discussion of potential solutions: seeking additional understanding of the situation; solutions based in personal experience; untested solutions; and scripting a potential response. Openness to feedback was demonstrated in statements made by P1 and P3 where they indicated their willingness to make attempts to implement feedback. Uncertainty about problems and solutions yielded three sub-themes: novice teachers did not know what to do; doubt about effectiveness of known solutions; and doubt about the ability to change.

The conversations between the agricultural education preservice teacher and the early career teacher in another educational discipline, P4 and the critical friend, yielded three main themes: establishing common ground as teachers, seeking reassurance, and openness to feedback. The theme of establishing common ground as teachers was demonstrated by P4's description of a teaching problem and their critical friend's agreement that they had encountered a similar situation in their non-agricultural education classroom. The theme of seeking reassurance was exemplified by P4's tendency to describe a teaching problem and the solution that they had already implemented, which was usually met by agreement from the critical friend. Openness to feedback was demonstrated by P4's statement that they would try to implement the

feedback they had been given. Only one theme overlapped between the agricultural education-agricultural education critical friends and the agricultural education-non-agricultural education critical friends: openness to feedback.

The interviews for all three agricultural education preservice teacher participants yielded the same two major themes: critical friendship as a valuable experience and critical friendships work under certain conditions. Three sub-themes emerged from the main theme of critical friendship as a valuable experience: advantages of an outsider's perspective, discussing teaching concerns, and obtaining new ideas and feedback. Three sub-themes emerged from the main theme of critical friendships work under certain conditions: familiarity with the critical friend; spatial proximity; and openness to criticism. These themes and the data from which they were derived provided an initial description of the experiences of agricultural education preservice teachers who participated in critical friendships, and led the researcher to develop a combined model of the underlying theoretical framework.

A. Summary of Findings

Conversation themes

Agricultural education—agricultural education critical friendship

Concern about dealing with the uncooperative minority of students. The majority of P1's and P3's teaching concerns stemmed from a few students who would not cooperate with their teacher to listen to the lesson, pay attention, stay off their cell phones, or engage with the lesson. The participants were concerned about how to deal with the few uncooperative students without sacrificing learning opportunities for the majority of students who were engaged, motivated to learn, and willing to pay attention. The concerns discussed by

P1 and P3 were similar to some of the teaching concerns discussed by the student teachers participating in Manouchehri's (2002) study of the usefulness of peer interaction. These concerns represented the input function, or perception, portion of Carver and Scheier's (1982) control theory. As P1 and P3 experienced teaching, they perceived situations where their actions as teachers did not elicit the student response they wanted, which prompted them to move to the next step of the negative feedback loop and compare the perception to a reference value. P1 and P3's teaching concerns were based in concrete experiences, one of the four steps in Kolb's (1984) experiential learning cycle.

Discussion of potential solutions. The data suggested that, after listening to the partner's teaching concern, P1 and P3 would ask a question for clarification and then recommend a solution, technique, or idea they had personally used with success or a method that they had not yet used themselves. Additionally, P1 and P3 both presented sample scripts to each other for use in potentially solving their teaching concern. Costa and Kallick (1993) stated that asking questions for clarification allowed critical friends to better understand the context of their partner's problem or concern, a characteristic confirmed in the types of questions asked by P1 and P3. The interactions between P1 and P3 support Fritz and Miller's (2003) findings that requiring communication between agricultural education preservice teachers while student teaching encouraged the exchange of advice and ideas. In discussing their concerns and potential solutions with one another, P1 and P3 looked for reference values to use in comparison with the teaching environment they had encountered during their perceptions of concrete experiences. Their exchanges allowed them to contemplate their attitude toward the behavior suggested by the critical friend, determine if the critical friend or the cooperating teacher expected them to enact the behavior, and consider how much control they would have in using the behavior. In recalling

past teaching events and identifying disagreement between their perception of their classroom environment and the reference value contributed by the critical friend, P1 and P3 entered into the reflective observation stage of Kolb's (1984) Experiential Learning Theory.

The scripting technique appeared to be unique to the participants, as it did not appear in the literature. Scripting could be interpreted as a method of displaying the ease with which the participant can enact the suggestion, or carry out the behavior, which also influences the participant's attitude toward the suggested behavior as modeled in Azjen's (1991) theory of planned behavior.

Openness to feedback. P1 was more likely to verbally indicate that they would incorporate the critical friend's suggestions for improvement. P3 acknowledged appreciation of the feedback they received fewer times, suggesting they may have been less open to feedback than P1. For most of the suggestions offered by the critical friend, P1 and P3 displayed a positive attitude toward the behavior and indicated that they had some perceived behavioral control over performing the suggested behavior. In turn, these factors positively influenced their intention to enact the suggestion, as described by Ajzen's (1991) theory of planned behavior. Their openness to feedback was indicative of the third reaction to feedback generated by the negative feedback loop modeled in Carver and Scheier's (1982) control theory, where the individual accepts the disagreement between their perception of their environment and the reference value provided by the critical friend, and attempts to make a change.

Uncertainty about problems and solutions. Several sub-themes emerged from this main finding. P1 and P3 both admitted during the course of the conversations that they did not know what to do about their particular teaching concerns. Both participants were aware of

potential solutions to their teaching concerns before consulting their critical friend, but indicated that they did not want to utilize these solutions because they viewed them as not having any impact on the students. P1 and P3 also expressed doubt about the ability to change; P1 doubted that they could find a way to motivate their deeply unmotivated students, and P3 doubted that they could change the behavior of their students by following up on threats of discipline. P1 consulted others and attempted to find a solution, but, finding none, accepted that the situation was one where they could not affect change. P3 recognized that their teaching practice was ineffective, but resisted changing their methods because they did not want to damage their reputation with the students.

Farrell (2001) suggested that “reflection can cause doubt, and that for this reason some people may not want to face any further uncertainties at this stage of their life” (p. 373). In helping each other reflect on their teaching concerns, P1 and P3 revealed doubts about their ability to change themselves or their students. These doubts only represented a small minority of the teaching concerns expressed by P1 and P3, and involved problems that were not easily solved. In these few incidences, the participants expressed negative attitudes towards the suggested behavior and perceived that they had little control over being able to carry out the suggestion. In P3’s case, they appeared to hypothesize about the behavior’s impact on the environment and, perceiving the potential impact as achieving the goal behavior but ultimately being seen by students as a negative action, declined to enact what was possibly the more effective solution. This was a very strong example of an individual’s first reaction to feedback generated by the negative feedback loop modeled by Carver and Scheier (1982), whereupon finding disagreement between their perception of their environment and the reference value provided by the critical friend, the participant sees the environment as being too difficult to

change and takes no action to try to align their present conditions with the ideal. P1 did not believe that any suggested behavior would be able to make an impact on the environment, and thus did not change their approach. This incident was one of the strongest examples of the participants' not completing the negative feedback loop after perceiving a disagreement between their perception and the comparator. In declining to change their teaching behavior, the participants in these instances did not proceed to engage in active experimentation.

Agricultural education—non-agricultural education critical friendship. P4 and their non-agricultural education critical friend appeared to stick closely to the conversation format provided to the participants in the reflection journal, which included questions about what went well during the week and what did not go so well. This could have been caused by hesitation by both participants to bring up teaching issues that they did not think the other would understand or hesitation to critique a peer with a different level of teaching experience, a limitation identified by Golby and Appleby (1995).

Establishing common ground as teachers. P4 and their non-agricultural education critical friend used the critical friend concept mainly to find common ground as teachers. P4 would talk about a teaching concern they had, and their critical friend would confirm that it was similar to a concern they had, even though they taught at different grade levels. P4 described the approach they took to alleviate their concern, and the critical friend stated that they employed a similar approach as well. P4 and the critical friend's successful search for commonalities as teachers supports Fritz and Miller's (2003) conclusion that agricultural education preservice teachers and preservice teachers in other subjects share the same basic teaching concerns. The presence of this theme also supports Swaffield's (2008) postulation that dialogue, defined as a "search for shared meaning" (p. 328), was an essential

feature of critical friendships, as well as Petrarca and Bullock's (2014) finding that critical friendships help participants find "support and reassurance" (p. 277) in the knowledge that they struggle together. P4 directly asked for feedback in the first recorded conversation; this was the only instance where P4 moved beyond the stage of abstract conceptualization and attempted active experimentation at the suggestion of the critical friend. In the other two conversations, P4 just described their problem and the technique or idea they used to solve it. In the interviews, P4 indicated that they did not adopt any features of their critical friend's teaching style as they perceived the differences in setting and students to be too great. P4 may not have asked for feedback because they did not feel that any of the techniques suggested by their critical friend would have been applicable to their classroom setting. Or, P4 may have been more confident in their teaching ability than P1 or P3, and may not have seen the need to solicit feedback from their critical friend as often.

Seeking reassurance. P4 appeared to seek reassurance from their critical friend that their teaching concerns were not unique, and that they had made the right decision in attempting to employ a particular solution. Fritz and Miller (2003) concluded that agricultural education preservice teachers have the same teaching concerns as preservice teachers in other disciplines, and P4 made this discovery as well by discussing teaching concerns with their critical friend. In terms of the theoretical framework, P4 was looking for a reference value to compare their actions to, but did not indicate any intention to perform an output function or actively experiment and therefore did not complete the negative feedback loop modeled in Carver and Scheier's (1982) control theory or the cycle in Kolb's (1984) experiential learning theory.

An incident in the P4-critical friend conversations occurred only once, but was significant enough to warrant mention. Although the non-agricultural education critical friend only asked one question for clarification, it was worded in a manner that prompted P4 to examine the possible reasons behind their students' lack of motivation. This question was very similar in nature to the types of “authentic and essential” (p. 67) questions that Handal (1999) observed being used by critical friends from different educational disciplines.

Openness to feedback. Openness to feedback was a weak theme, but was still present in the conversations between P4 and their non-agricultural education critical friend. It was mainly attributed to P4's willingness to adopt the suggestion offered to them about finding a way to motivate students to complete a unit on electricity. Similar to P1 and P3, P4's acceptance of the feedback was indicative of the third reaction to feedback resulting from disagreement between P4's perception of their environment and the reference value provided by the critical friend. In this instance, P4 accepted the disagreement and indicated their intention to attempt change through active experimentation. This incident occurred in the week four conversation; in a later conversation, P4 revealed that they had actively experimented with the critical friend's suggestion to find an extrinsic motivator and was able to impact change on their classroom environment, bringing it closer to the reference value provided by the critical friend.

Interview Themes

Agricultural education—agricultural education critical friendship

Critical friendship as a valuable experience. P1 and P3 both saw their critical friendship as a valuable experience, which supports conclusions from numerous studies (Baskerville & Goldblatt, 2009; Farrell, 1998; Handal, 2009). P1 stated that the peer observation

component prompted them to compare themselves to the peer they were observing, and that they would ask themselves if they were doing what the peer was doing, or were they doing different things than the peer. This aligns with Cosh's (1999) definition of peer observation as a technique that encourages awareness of and reflection on one's own teaching practices. P3 found that peer observation allowed them to see different styles of teaching and obtain ideas for their own teaching practice, statements that support Hendry et al.'s (2014) finding that peer observation allowed participants to learn about new teaching techniques.

The interview data also provided insight into whether P1 and P3 actually followed through with their intention to enact behaviors suggested by each other through active experimentation and if they had made an impact on their classroom environment, as modeled by Carver and Scheier's (1982) Control Theory. P1 discussed ideas and feedback that P3 gave them about dealing with student cell phone usage, and indicated that they had incorporated those ideas through active experimentation and made an impact on their classroom environment.

Critical friendships work under certain circumstances. P1 and P3 both identified certain characteristics that made it easier for them to form and maintain a critical friendship. P1 focused on the benefit of being located in the same school as P3, while P3 focused on their familiarity with P1. P3's statements about familiarity supported Farrell's (1998) postulation that the choice of a critical friend who is familiar may make it easier to develop trust. The conditions essential to forming a critical friendship named by P1 and P3 differed from those identified by Baskerville and Goldblatt (2009), who suggested that an agreement to work as critical friends, instruments for recording and reflecting on interactions as critical friends, and setting aside time to be critical friends were factors that allowed the researchers to establish a successful critical friendship. These differences are mostly likely due to the fact that the participants were

instructed to pick a critical friend by the researcher, and therefore did not spontaneously initiate critical friendships. Participants in this study were also provided with reflective journals at the beginning of the study. P3 stated that the time commitment required to reflect in the journal was one of the most difficult parts of participating in the critical friendship. This supports Greiman and Covington's (2007) finding that time was a barrier to reflection for preservice teachers reflecting via journals. P3 also confirmed Greiman and Covington's (2007) assertion that agricultural education preservice teachers preferred to reflect orally, as they stated that they and their critical friend had no difficulty talking about their problems but found it difficult to write things down.

Agricultural education—non-agricultural education critical friendship. Although P4's critical friendship with an early career teacher in another education discipline did not result in gaining many new ideas about teaching, P4 still found the concept to be useful to their teaching practice. A similar finding resulted from Farrell's (1998) critical friendship, where the researcher did not observe any actual change in the critical friend's teaching practice, but both parties still maintained that they had derived some benefit from the relationship. P4 specifically mentioned the utility of being able to discuss teaching problems with another educator as a major benefit of participation in the critical friendship.

Critical friendship as a valuable experience. P4 found great value in their non-agricultural education critical friend's willingness to offer constructive feedback, expressing appreciation for the fact that the critical friend seemed to be even more honest than their cooperating teachers. P4 knew that their critical friend had a master's degree and slightly more teaching experience, and expressed some hesitation about criticizing others' teaching in general. This supported Schuck and Russell's (2005) assertion that the critical friendship in that study

may have been inhibited by the difference in levels of experience between the two participants. However, in the case of the present study, the critical friend was still novice enough to be perceived as approachable and relatable by P4.

Critical friendships work under certain circumstances. Like P1 and P3, P4 recognized that a critical friendship would not suit every preservice teacher, and identified some characteristics that allowed them to easily form and maintain a critical friendship. P4 mainly focused on the need for potential participants to be prepared to receive criticism from their critical friend. P4 stated that educators who want to be better teachers and specifically solicit a critical friend to observe them must be ready to receive criticism. That statement works in tandem with a requirement of critical friendship identified by Handal (1999), who suggested that “if we are quite certain that our teaching is being carried out just the way we want it, we should not invite a critical friend to observe it” (p. 68).

Combined Model

A visualization of a combined theoretical model for this study arose as the data were coded and sorted into categories.

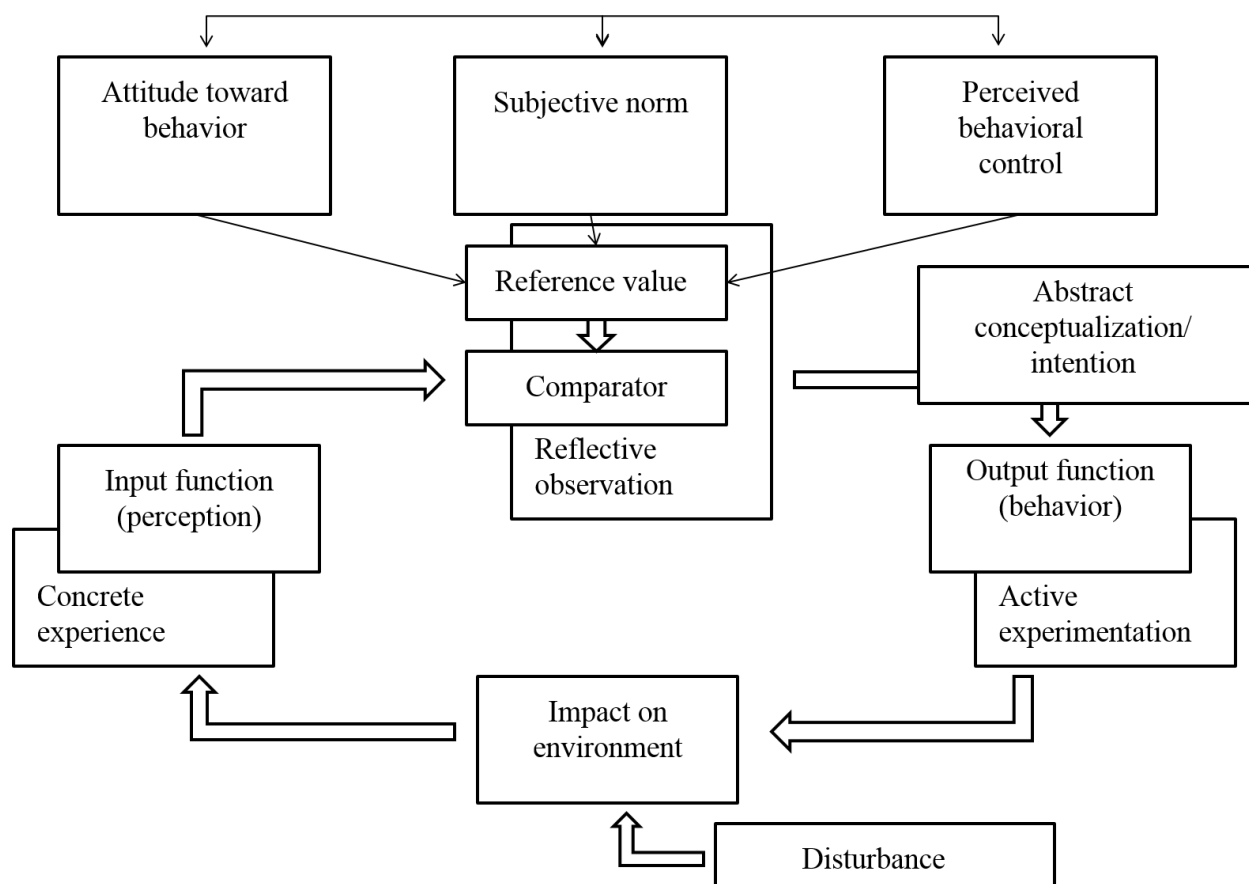


Figure 4. The combined control theory, Theory of Planned Behavior, and Experiential Learning Theory model.

This combined model starts with an input function, or a concrete experience. The participant experiences a teaching concern, or perceives the characteristics of the classroom environment that they have created. The participant then moves to the second stage, where they compare what they experienced to what the critical friend has experienced through reflective observation. The participant's attitude toward the critical friend's behavior, their perception that the critical friend expects them to enact the same behavior, and their perception of actually being able to enact the behavior all inform the reference value. If the participant senses disagreement between the perception of their classroom environment and the critical friend's environment and accepts this disagreement, they continue through the loop/cycle. Before the participant engages in active

experimentation and performs an output function, they must consider their intention to perform the behavior and the behavior's relationship to their knowledge of effective teaching techniques and learning theories. The intent to perform the behavior is also influenced by the participant's attitude towards it, their belief—or lack thereof—that their critical friend expects them to perform the behavior, and their perception of how much control they have over enacting the behavior. After all these factors are considered and the participant engages in active experimentation, the loop continues with the performed behavior creating an impact on the environment. Disturbances outside of the control of the participant may also impact the environment. If the behavior creates an impact, the loop/cycle moves forward, and the participant once again contends with an input function via concrete experience.

B. Implications for Practice

The findings of this study support the idea that critical friendships are a useful technique to help agricultural education preservice teachers connect with agriculture teacher peers and with other teachers. The participants indicated that the critical friendships helped them improve as teachers in some way, and thus it is recommended that agricultural education preservice teachers be encouraged to form critical friendships with their teacher peers during the student teaching experience. However, only half of the preservice teachers invited to participate were able to finish the entire study. Of the non-respondents, one participant assigned to the non-agricultural education critical friend group had initially indicated interest in participating and knew of a potential critical friend they could contact, but dropped out of the study for unknown reasons. The third participant assigned to the agricultural education critical friend group did not respond to the researcher's attempts at contact until the end of the study, when they indicated they did not know of any potential critical friend and had decided not to participate. The last potential

participant, who had been assigned to the non-agricultural education critical friend group, did not respond to any of the researcher's attempts at contact. Based on the experiences of five of the six potential participants, familiarity was the most important qualification for a prospective critical friend.

The participants identified several conditions that assisted in making their critical friendships a success. Previous familiarity with the potential critical friend was mentioned as a major part of being able to participate in the critical friendship. This observation supports Farrell's (1998) and Schuck and Russell's (2005) postulation that trust between critical friends may develop faster if they are already familiar with one another. Being a part of a cohort was listed as a limitation of the study and a possible influencing factor in forming a critical friendship. The data confirmed this point; P3 said that they would not have had as much success in giving criticism had they not known P1 very well. In this instance, the limitation increased the effectiveness of the concept employed in the study. Familiarity made it easier for the participants to be open in discussing teaching concerns and giving criticism and feedback to each other. This openness supports the claim found throughout the literature that trust between the critical friends was an essential component of the concept (Costa & Kallick, 1993; Farrell, 1998; Handal, 1999). Spatial proximity was another factor which seemed to influence the effectiveness of the critical friendships. All participants were located in close proximity to their critical friends, either in the same school or in the same town. The directions given to the participants before the beginning of the study stated that they were supposed to call their critical friend; however, the recorded conversations seem to indicate that the participants met in person to conduct their conversations. This may have resulted in stronger critical friendships, in spite of the participants' observation that participation in a critical friendship was made difficult by the requirement of investing a

significant amount of time. P1, P3, and P4 all indicated that they made efforts to be open to criticism from others, with P3 and P4 noting that individuals who are not ready to receive criticism would not benefit from participating in a critical friendship.

The purpose and results of this study were not designed to provide a definite answer as to which was more beneficial: a critical friendship between two agricultural education preservice teachers or a critical friendship between an agricultural education preservice teacher and an education major or teacher in another discipline. The participants stated that they benefitted from either type of critical friendship. The agricultural education critical friends used their friendship to find new solutions to teaching concerns; the non-agricultural education critical friend pair used the relationship to gain understanding of each other's teaching practices. Critical friendship is a useful tool, and choice of the critical friend will depend on what type of benefits the participants want to derive from the relationship.

C. Limitations

Time was a limiting factor in this study. The participants had less than one semester to actively engage with each other as formal critical friends. Since all of the participants were previously very familiar with their choice of critical friend and had convenient access to them during the student teaching experience, it is possible that the participants would have engaged in very informal critical friendships even without intervention from the researcher. The non-agricultural education critical friend was not briefed on the concept of critical friendship by the researcher. Unless the individual had heard about the concept through their experiences in a teacher education program, their knowledge of critical friendship depended on what P4 told them. Thus, the non-agricultural education partner may not have been as effective as a critical

friend who had been briefed on the process. As the conversations were voice-only, there was no indication of what message the participants transmitted through their body language at the time. P3 did not verbally indicate openness to feedback as often as P1 did; it is possible they indicated this through facial expressions or body language, neither of which could have been detected via the data collection methods used in this study.

D. Recommendations for Research

Further research should explore the reasons why the non-respondents chose not to or were unable to form a critical friendship. Of the six potential subjects, only three chose to participate. Research should examine whether participants who decline to participate in critical friendships do so because they did not know any qualifying peers whom they trust or whether they did not want to invest the effort in developing trust in another person while navigating the struggles of student teaching. Further lines of inquiry should also examine whether a critical friendship helps preservice teachers cope with the stress of student teaching or it was too much of a burden to shoulder. It is also possible that the non-respondents were not ready to give and receive criticism from peers on a regular basis, or that they preferred other methods of reflection.

Further research should also seek to replicate this study with more participants. The participants all thought that their critical friendships were successful, and identified the characteristics that made it easier for the relationships to form. Including more participants would allow researchers to discover what characteristics discourage the formation of critical friendships. These three were all familiar with their critical friend long before beginning the critical friendship, a condition identified by the participants as making it easier for them to trust each other enough to offer and accept criticism. The effect of spatial distance between

participants on the effectiveness of the critical friendship should also be examined. Future research should examine whether critical friends who cannot physically meet on a regular basis derive as much benefit from the relationship as critical friends who are located in close proximity to each other.

Additional research might also examine how the critical friendship forms over the course of the semester. This study only analyzed conversations from weeks 4 to 6 of the critical friendship. We do not know what the participants discussed in the first three weeks of the study, or what they discussed in the following weeks. Future studies should require participants to use an audio recorder throughout the length of the study to familiarize themselves with the device. Future research should seek to investigate whether teaching concerns discussed by the critical friends change as their experience level increases, and if participating in a critical friendship enables preservice teachers to reflect on a deeper level than preservice teachers who do not have a critical friend. Longitudinal studies should examine whether the participants who identify some problems as unsolvable while student teaching eventually find techniques to overcome these teaching concerns. Researchers should also look to see if there are differences in the teaching concerns that participants bring to their critical friend and the concerns that they address with their cooperating teacher, and if these concerns overlap.

Further research should examine reasons why a non-agricultural education critical friend would not ask for feedback or suggestions from a critical friend in agricultural education. Researchers looking to replicate the study should also explore the scripting technique utilized by P1 and P3. Future studies should seek to find if this technique was a personality trait exclusive to P1 and P3, or if it is utilized by other student teachers participating in critical friendships.

Conclusion

This study sought to improve agricultural education preservice teachers' ability to reflect on and change their teaching practices, pushing them closer to becoming educators with the "adaptive expertise" (Doerfert, 2011, p. 22) needed to teach students in the 21st century. To challenge the participants to reflect on experience and consider new ideas, the study used the concept of critical friendship. A critical friend advocates for the success of the teacher, but does not hesitate to give constructive criticism in order to encourage growth and improvement as an educator (Costa & Kallick, 1993). The agricultural education preservice teachers who participated in this study all recognized their status as novice teachers, and expressed a need and a want to improve. During the one-on-one interviews, all of the participants indicated that they found being and having a critical friend as beneficial, even though they had different experiences as critical friends. The participants identified openness to criticism as a catalyst in improving as a teacher. In this study, critical friendships were successful in encouraging participants to reflect on their teaching and assisting them in finding ways to improve. Critical friendships were beneficial to agricultural education preservice teachers, and their use during the student teaching experience was recommended. Critical friendship is one of several methods teacher educators can utilize to encourage their preservice teachers to improve practice and engage in reflection.

VI. References

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VII. Appendix A. Critical Friendship Introductory Lesson

- I. Lesson: A Guide to Critical Friendship
- II. Objectives
 - a. Identify the purpose of a critical friend.
 - b. Identify roles of a critical friend.
- III. Reasons to Learn
 - a. Why do we need to have a critical friend?
 - b. Why do we need to know what a critical friend should do?
- IV. Questions to Answer
 - a. What is a critical friend?
 - b. What should my critical friend help me with?
- V. Solutions to Problems
 - a. Interest Approach: Art Lesson

Students will pair off and draw a picture of each other. The students will then reveal their artwork and offer a critique of their partner's artistic skills.

We're going to start with a little activity to get you in the mindset. I want you to pick a partner and sit across from each other. Now, to the best of your ability, I want you to draw your partner's face using whatever media you want—pencil, pen, marker, crayon, whatever. However, your partner cannot look at his or her portrait until I say so. I'll give you about seven minutes.

Now I want one of you to bravely reveal your work of art to the other. For the person who is looking at their portrait, I want you to let your partner know how they did. Do you think they captured your dreamy essence? Or do you think they were actually thinking about a potato while drawing? Once you are finished, repeat the process with the other portrait.

Alright, has everyone had their art evaluated? You may return to your chairs. How many of you said that your portrait looked just like you? Even though it actually looked like that dang potato? How many of you felt a little—or maybe a lot—uncomfortable criticizing your partner's art? Did anybody go full Gordon Ramsay and say it was absolute rubbish? How many of you offered some sort of support—say, they got the eyes right, but might you consider tweaking the hair a little more so I don't have a mullet? Would you say that activity made you pretty uncomfortable?

Evaluating each other's artwork isn't entirely unlike being a critical friend. What's a critical friend, you ask? Sounds—*critical*. I don't want to be mean, you say. Well I say you're probably thinking about the wrong kind of critical.

What is a critical friend?

A critical friend is someone who helps you reflect on your teaching in the climate of friendship.

They critique you because they are your friend and want to see you succeed—a critical friend roots for you, not against you.

A critical friend sees things differently—a problem you have no idea how to solve may be easy work for your critical friend.

You may feel uncomfortable or angry or insecure at the thought of criticism from another person—but that’s how you know it’s working.

A critical friend draws attention to your weaknesses but also “encourages the strong aspects of their friend’s work.” (Gibbs & Angelides)

You want your critical friend to gently ruffle your feathers.

Question your assumptions, back up claims with evidence, speak clearly about your true beliefs regarding education.

Who is NOT a critical friend?

Someone who only pats you on the back.

Yes, it’s good to let each other know what you did well—but don’t be afraid to mention what you didn’t think went so well. Think back to the art lesson. If your partner told you that your portrait was so great it belonged in the Louvre when it really didn’t even qualify for the recycle bin, how would you know?

We can’t learn if we don’t know what we did wrong.

Someone who is deliberately mean.

This is not American Idol and you are not Simon Cowell.

Put away the snark—the critical friend seeks to build up, not put down or discourage.

*Reteam with your previous partner and reexamine your artwork. This time, I want you to act as critical friends. This means that you are supportive of your partner’s effort, but you want to give them suggestions to help them get better.

Now, compare that experience to the one at the beginning of the lesson. How did it go this time around?

Activity: Optical Illusion

Students will examine an image of an optical illusion (the young lady/old woman) through the Think-Pair-Share protocol. Students will examine the image on their own,

then turn to a partner and share what they saw, using examples to support their opinion. Students will then share with the class what image they saw first.

The purpose of this activity is to help students further practice being a critical friend—making observations, sharing observations, and supporting observations with evidence.

Finding a critical friend

You don't have to be besties—but look for someone who won't flake on you and is willing to cooperate on reflecting every week.

Someone that you *trust*—this is the million dollar word. If you don't trust a person, you probably won't listen to their suggestions.

Establishing ground rules is very important in this process—let each other know expectations for the critical friendship.

Ex. You want your friend to help you work on your discipline skills, while your friend wants you to help them work on their questioning skills.

Ex. You both agree to make one supportive comment for each critical comment.

Determine a time to talk each week.

Can be a phone call or Skype or Facetime.

For each conversation with your critical friend:

Record the date and time.

Some questions to help you get thinking/talking (from Petrarca & Bullock):

- How did the teaching week go for you? Were there any moments that stand out as being particularly motivating or particularly problematic?
- How do you think your students responded to the big ideas you hoped to get across this week?
- Were there any moments of insight for you this past week?
- What went well, did not go well, and why do you think this happened?
- What specific teaching approaches did you use this week? What was the reaction? What kinds of discussions did you have with the students about how and why they were being taught in particular ways?

Summarize the major points of your discussion.

Think about using these questions as a guide:

Stuff my critical friend said that I want to use.

Stuff my critical friend said that I need to look into more.

From Baskerville & Goldblatt:

Being a Critical Friend

- In what ways were you a critical friend today?
- What questions did you ask to help your critical friend see a different perspective today?
- How did you stimulate others' thinking today?

Being supported by a critical friend

- In what ways did your critical friend support you in reflecting on your practice?
- What questions were you asked?
- How did others stimulate your thinking?

Basically keep a log of when and what—look back at it often if you need to!

I'm using deception here—I say you are filling out a log, but you are actually reflecting. Muahahahaha!

Take as much time as you need or have—but keep off-topic conversation to a minimum.

Focus on the reflection part.

You will be required to record your discussions every week for a three week period.

You must be observed by your critical friend at least once.

Talking over the phone is better than email, but it cannot beat being in the same room as your critical friend.

We already have a lesson plan prepared for you to deliver—just make it your own.

On the day of the observation:

Have your critical friend arrive early.

Use this time to establish what you want your friend to specifically observe—questioning, discipline, implementing an activity, body language, etc.

Explain the class context to them: grade levels, typical student behavior, etc.

Teach the prepared lesson plan.

Reflect with your critical friend afterwards (record this conversation as well).

Perfectly okay to use the questions from your weekly discussions as a guide here.

Record the date, time, and summary points in the journal as well.

How long are we doing this?—All semester! Make it a habit!

Critical Friends timeline	
Jan 19-29	Block classes—choose critical friend
Feb 1-19	Conversation with critical friend 1x per week, no recording; complete journal entry after each conversation
Feb 22-March 11	Conversation with critical friend 1x per week, recorded; observation by critical friend and discussion (discussion recorded); complete journal entry after each conversation
March 14-18	Turn in all recorded conversations and journal entries for first six weeks; continue conversations with critical friend and journal entries
March 28-April 29	Conversation with critical friend 1x per week, no recording; complete journal entry after each conversation
May 14	Graduate!

VI. Summary

A critical friend is a great resource to have—help yourself while you help your friend too! A critical friend shouldn't be intimidating like your cooperating teacher or your professor—they are in the same boat as you as a beginning teacher who doesn't know that much. But they have different experiences and different viewpoints and can help you examine your teaching techniques in a new light. As a critical friend, you want to build up your partner, not break them down. Critical friendship is all about finding and working on weaknesses but also valuing strengths.

VII. Evaluation

VIII. Appendix B. Critical Friendship Reflection Journal

<h1 style="margin: 0;">Critical Friendship Conversation Log</h1>	
Name:	
Critical Friend:	
Discipline:	
teaching	<input type="checkbox"/> Student --or-- <input type="checkbox"/> Currently

Help, I don't know what to say to my critical friend!

Feel free to use any of the following questions to help you and your critical friend get started.

From Petrarca & Bullock:

- How did the teaching week go for you? Were there any moments that stand out as being particularly motivating or particularly problematic?
- How do you think your students responded to the big ideas you hoped to get across this week?
- Were there any moments of insight for you this past week?
- What went well, did not go well, and why do you think this happened?
- What specific teaching approaches did you use this week? What was the reaction? What kinds of discussions did you have with the students about how and why they were being taught in particular ways?

Critical Friendship FAQs

- **Q: What is a critical friend?**
 - A: Someone who helps you reflect on your teaching in the climate a friendship—they should identify your weaknesses but also encourage your strengths.
- **Q: Who is NOT a critical friend?**
 - A: Someone who avoids talking about your weaknesses altogether or who is deliberately mean—a critical friend should want to help you improve your teaching skills.
- **Q: Do the conversations with my critical friend have to follow a specific format?**
 - A: No. You can use the “I like”—“I wonder” format, or some of the questions provided on the next page. As long as you and your critical friend are exchanging constructive criticism and reflecting, it doesn’t matter what format your conversations use.
- **Q: How can I contact my critical friend?**
 - A: (to be filled out by participant)
- **Q: Do I have to be observed by my critical friend?**
 - A: Yes, you must be observed in person by your critical friend. Flip to Week 4 in the journal section of this booklet for more instructions.
- **Q: Do I have to observe my critical friend?**
 - A: No, you do not have to observe your critical friend. But if you plan on doing so, let me know!

Critical Friendship Checklist		Date Completed
Week 1 (Feb. 8-12)	Contact critical friend	
	Fill out Week 1 journal	
Week 2 (Feb. 15-19)	Contact critical friend	
	Fill out Week 2 journal	
Week 3 (Feb. 22-26)	Contact critical friend	
	Fill out Week 3 journal	
Week 4 (Feb. 29-Mar. 4)	Contact critical friend	
	→ Were you observed by critical friend this week? Y / N	
	Record conversation	
	Fill out Week 4 journal	
Week 5 (Mar. 7-11)	Contact critical friend	
	→ Were you observed by critical friend this week? Y / N	
	Record conversation	
	Fill out Week 5 journal	
Week 6 (Mar. 14-18)	Contact critical friend	
	→ Were you observed by critical friend this week? Y / N	
	Record conversation	
	Fill out Week 6 journal	
Week 7 (Mar. 21-25)	Contact critical friend	
	Fill out Week 7 journal	

Critical Friend Peer Observation

Between February 29th and March 18th, your critical friend will be required to observe your teaching at least once. We have prepared a lesson plan and presentation about going to college for you to teach during the observation, so less work for you! There are a few areas where you can add in a little personalization, and they are indicated on the lesson plan.

Get together with your critical friend and determine a day that they can come to your cooperating school and observe you.

- On the day of the observation:
 - Have your critical friend arrive early, and make sure they check in at the school office.
 - Use this time to establish what you want your friend to specifically observe—questioning, discipline, implementing an activity, body language, etc.
 - Explain the class context to them: what grades (7-12), typical student behavior, etc.
 - Teach the prepared lesson plan.
 - Reflect with your critical friend afterwards (This will count as one of your recorded conversations).
 - Perfectly okay to use the questions from your weekly discussions as a guide here.
 - Record the date, time, and summary points in the journal as well.

If you have any questions, please email the researcher at [email] or text [phone number] (please include name).

IX. Appendix C. Lesson Plan Used in Peer Observation Exercise

- I. Lesson Title:
- II. Situation: To be filled out by student
- III. Objectives:
 - a. Identify advantages of going to college.
- IV. Reasons to Learn:
 - a. Why do we need to consider continuing our education beyond high school?
- V. Questions to Answer:
 - a. What are some reasons to consider going to college?
- VI. Solutions to Problems (all times approximate)
 - a. Interest Approach (5-7 mins)

Back to the Future

Strap into the Delorian, ladies and gents—we're going to the future!

It's the year 2025—where do you see yourself? Take a few minutes to think about your future.

Are you ruling the world? Are you rich? Married? Working for minimum wage? Making a difference? Tell me what you see.

The instructor may offer an example of what he/she would have said if he/she were one of the students.

Did you have any possessions? Like a home? A mansion? A yacht? A used Ford pickup with holes in the floorboards? How were you able to acquire these things? "I stole them" is not an appropriate answer.

What career did you see yourself in? What qualified you for that job?

Did you maybe have to go to college to get that particular job?

For those of you who didn't imagine yourself going to college, why did you decide not to go? Money? Grades? No point in going? No judgment here—I want to hear your reasons.

b. Lesson (20-30 mins)

As you might could tell, we will be talking about college today. Specifically, I'm going to try to convince you to go.

So why should you go to college?

1. Make more money!

I'm not going to lie to you—college is expensive. But think of it more as an investment than a burden.

You could go straight from high school to a job somewhere and be making money for a while. You might think to yourself “Well this isn’t so bad.” But what if you had gone to college?

I will let the numbers speak for themselves.

In Arkansas, high school graduates earned on average about \$25,000 a year. Assuming you don’t have any children or a spouse, you could possibly live fairly comfortably on that much.

People with associate, or two-year, degrees earned about \$29,000 a year.

That extra \$4,000 a year could buy you a nice used car or allow you to live in a nicer place.

You could eat a decent meal at McDonald’s or Subway every day for an entire year. Please don’t do that though.

If we look at people with bachelor’s degrees, we find that they earn over \$43,000 a year--\$18,000 a year more than someone with just a high school diploma.

\$18,000 is a lot of money—enough to buy you a brand new car or mid-sized pickup truck. Or a pretty nice fishing boat. Or even a like-new John Deere Discbine.

The instructor may want to customize examples based on students’ interests and local agricultural practices.

So if you just have a high school diploma, you are losing out on the equivalent of a brand-new vehicle every year.

So yes, college costs more than no college—but you are going to make up for that and more with a degree of some sort.

Even if you don’t finish college, you are still probably going to earn more money than someone who didn’t ever try to go—to the tune of \$4,000 more per year.

As an added bonus, the higher your degree, the less likely you are to be unemployed!

2. Challenge yourself!

I want you to think really deeply here—are you really satisfied with your current level of knowledge? Do you reeeeeeeeeeeeeeeeeeealllly think you already know everything you need to know in order to succeed and be happy in life? Take a moment to think that question over.

If yes, I would ask you to reevaluate your life goals.

If no, boy, do I have an opportunity for you!

College is not easy—you will learn things that make your brain hurt more than anything you’ve ever experienced in high school.

But the good news is that a lot of these classes will be geared specifically to your field of study—you will be acquiring knowledge that you will actually use.

3. Meet new people!

Do you already know most of the people in your graduating class? Do you think you might want to meet other people who aren’t from your hometown?

You will meet so many different people at college.

The instructor should include some examples of interesting/fascinating people he/she met while at college (school-appropriate).

Everybody has a different story to tell too—are you excited to listen?

4. Get out and see something new!

Some of you may not have even been outside the state. You can experience all sorts of things on the internet, but it is no substitute for actual experience.

How many of you have ever been to a real concert? Or attended a lecture from Bill Nye the Science Guy? Or seen a play? Perhaps the outdoors is more your tune. (Instructors, feel free to change these examples as needed)

The instructor should definitely include some examples of great experiences he/she had at college (school-appropriate, please).

College is more than just classes and final exams—it’s about the overall experience, from terrible dining hall food to late-night movie parties in your dorm and all-night study sessions.

5. Build your resume!

Employers view your degree as a sign of commitment—you stuck with it for two or four years.

So what stops some people from continuing their education?

How will I pay?

You can apply for scholarships, aid from the government, and loans. Some students work their way through too.

You can fill out scholarship applications until you get sick of them.

What if I don't know what I want to major in?

You will not be the only one. I think pretty much everyone questions their choice of major at least once. Some people never figure out what they want to do!

But I know people who make lots of money and they didn't go to college.

This is the exception, not the rule. On average, people with college degrees earn more money than people without them. Better safe than sorry.

So I've given you reasons "why" you should be considering college as the next step in your journey through life. But what about the "how"—where do you even start??

When do I need to apply?

The U of A encourages you to apply before November 1 to get priority consideration for housing, scholarships, etc.

When do I need to take the ACT?

Before you apply for admission usually. So if you wanted to apply before Nov. 1, you should sign up and take the ACT in October.

How do you fill out the FAFSA?—you sell your soul to the Department of Education and hope for the best.

Just kidding. You just need your parent(s) or guardian(s) tax info, and your own if you have it. And patience. Sooooooooooooo much patience.

FAFSA priority deadline is March 1—this means you get first dibs if you qualify for federal aid.

When are scholarship applications due?

The priority deadline is November 15 and the final deadline is February 1.

VII. Summary

You may not have thought about it, but college may be something that you need to consider in order to achieve the life you want. It's a lot of money and a lot of work, but it will pay off in the long run.

VIII. Evaluation: Taking the First Step

So your assignment for today is to take the first step towards college. You can do this one of several ways. You can:

Fill out an info card.

Schedule a visit to a local community college or university. These are usually free and sometimes they even give you free stuff, like a t-shirt or drawstring backpack.

Visit the websites of at least three colleges and write down what you might be interested in studying.

Sign up to take the ACT.

If you are a senior and haven't done so already, you could apply for admission!

X. Appendix D. Interview Protocol

Good morning/afternoon, [participant]. This is [researcher]. How are you doing today? You are student teaching at [x]—how is that going so far? Are you about ready for it to be over or are you sad to be moving on? I'm sure you've been asked this a million times already, but what are your plans for the future? Are you going to stick with teaching or are you looking elsewhere, or just taking it one day at a time? So right now you are about to participate in an interview about your experience in a critical friendship. I will ask you some questions about your critical friendship and teaching. Please answer them to the best of your ability, and I encourage you to elaborate when you need to. This interview will be recorded. You do not have to participate, and you may withdraw at any time and your data will be excluded from the final study. Are you ready to begin? If you need me to repeat anything or you don't understand a question or you think of a question during the interview, let me know.

Interview Questions

1. Do you have an image of your own teaching style? How would you describe yourself as a teacher?
2. Do you learn anything about your own teaching by observing someone else teaching?
3. How did you find the instructions for the role as a critical friend? Could you apply the criteria?
4. Is there any difference between what you learn when you observe and when you are observed?
5. Did you find it difficult to criticize a colleague in their role as a teacher? How did you feel about receiving criticism?
6. What about the proportions between negative and positive critique?
7. Did you refrain from bringing up certain issues because of concern for your partner?
What kind of issues?
8. Have you made any changes in your teaching style as a result of your experiences from the Critical Friend project? What have you changed?

9. Did you discover anything about yourself as a teacher during the project that you were not aware of?
10. Have you adopted any features of your partner's teaching style?
11. Are the benefits of being a critical friend worth the extra effort?/Do you think it is worth the effort to be a critical friend?
12. Are there any risks or problems involved in having a critical friend? You mentioned _____, _____, and _____. Can you tell me more about these?
13. Should the critical friend concept be a part of regular teaching practice?

That concludes the interview. The recording will be transcribed and analyzed for themes, and if I need you to clarify any statements, I will let you know. If you still have your critical friendship journal, turn it in to [university supervisor] during your end of the semester meeting on May 6th. Otherwise, you are done. Your data will be assigned a number, and you will not be identified in the final results. It will remain confidential. The finished thesis will eventually be published in the ProQuest Thesis and Dissertation database. If you do not wish for your data to be published, let me know and it will be excluded from the final study. Again, thank you for your participation. Do you have any questions about this interview or the research study overall?

XI. Appendix E. IRB Protocol



Office of Research Compliance
Institutional Review Board

January 27, 2016

MEMORANDUM

TO: Sable Sellick
Kate Shoulders

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 16-01-470

Protocol Title: *Experiences of Agricultural Education Preservice Teachers Engaging in Critical Friendships*

Review Type: ☐ EXEMPT ☒ EXPEDITED ☐ FULL IRB

Approved Project Period: Start Date: 01/25/2016 Expiration Date: 01/24/2017

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<https://vpred.uark.edu/units/rscpi/index.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 18 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior* to implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.